The Builder.

No. CCCXLVI.

SATURDAY, SEPTEMBER 22, 1849.

BIRMINGHAM has been in a bit of a bustle for several days past: science and *savans*, music, manufactures, and paintings, concurred to attract a large number of visitors to what the Bishop of Oxford called the "great practical metropolis of the kingdom,"—he might have said, of the world. We allude, of course, to the "Festival," the British Association for the Advancement of Science, the Exposition of Manufactures and Art, and the Exhibition of the Birmingham Society of Artists,—or rather, the exhibition of modern works of art in the *rooms* of the Birmingham Society of Artists.

Birmingham is a wonderful place, when thoroughly comprehended; but this is not to be done by a glance. As the Rev. Professor Robinson, the new president of the Association, observed at the dinner:—"Where in the whole world could he, and men like him, whose delight it was to have their theoretical knowledge enlightened by the intelligence and skill of practical men,—where on earth could they learn such new and extraordinary things, and see a development beyond any thing they could have conceived of the application of the principles to which they had devoted their lives;" and never let the merely practical men forget that it is to science they are indebted for the discovery of principles out of which processes grow,—that science has increased their powers and directed their labours?

We would say, with the president, of the works of Birmingham, though we could not go wholly with him in applying the remarks, as he did, to the present exposition there—"Days and months would be consumed in viewing those extraordinary creations and treasures of industrial art, and on the last day there would be still much to wonder at and to learn. What a development of power—what an amount of knowledge! What patient perseverance and industry exist and reign where such things are! What a noble school to open men's minds to a full conviction of the powers before them of the boundless mind that only wanted to be explored, but which, to be explored in its widest range and its fullest extent, must be explored under the guidance of the lamp of knowledge! It was not by mere blind and tentative experience that they had been able to realize the marvellous conceptions they had arrived at. They told as clearly as a book did the mind of its author,—they told in unmistakeable distinctness that these men must have been among the giants of their race,—that however they among their books might think highly of their own attainments, there was a far wider field, a far greater number of labourers teaching them what they knew of the past."

At the opening meeting, on the 12th, the professor spoke eloquently of the value of association, and maintained that science can be advanced only by its means.

"The power of association," said he, "of combining united labour, is confessed in all ordinary undertakings, in arts, in manufactures, and in politics. What then is there new in applying it to science? There is nothing new—the novelty is in recognizing its efficacy. Observe, in the first place, that although science—at least physical science—is of comparatively recent origin, physical knowledge is of very ancient date. Even from the origin of our race it seems to have been the object of our desire. Some sought it for the influence and power it gave them over mankind; some from the high instinct which leads the noble mind to see its beauty, and appreciate its worth. Even in the first glimmer of history, the astronomy of the Assyrian magi looms through the dark. Geometry, which might be the champion and guide of astronomy, stands forth in feeble development amidst the antiquities of India. The sepulchres of Etruria, of Egypt, and of Nineveh, give up their treasures to prove that even in that remote date was developed in no low degree that practical chemistry which has been transmitted to us by the Arabians, their successors. The architecture of the middle ages displays a knowledge of the principles of equilibrium and power, which fills the mind capable of appreciating it with admiration and wonder beyond that inspired by marvels of modern art. The writings of Roger Bacon and Kirch show that much of the rudiments and ulterior aims of experimental physics was known in the cloister. But although the elements were there, there was no vivifying principle to combine them into a living body. Association was wanting, not intellectual power and sagacity. The Greeks possessed that in a measure equalled perhaps by no other variety of mankind. But the unhappy element of discord, which seemed inherent in their nature, and which split their philosophers into aggressive sects and their nations into hostile fragments, prevented the union necessary to a development of science. But at last that great principle was revealed in one of those mighty movements which stirs up the world of mind from time to time, as those of geology disturbed the earth at the commencement of some great formation. We find that now, united in the brotherhood of knowledge, they have become as anxious for publication as they were before for secresy. Communication and intercourse have helped investigation: each seeks the other for aid, and the only jealousy that is now shown is lest they should be anticipated in important discoveries or successful results.

The reverend speaker erred in his statement, and lost an illustration, when he so spoke of mediæval architecture. The principle of association was therein carried out in an extraordinary degree, and the result was extraordinary progress.

In answering those who asked, "of what use is science?" the president said,—

"There is not a single element of our commercial prosperity in which the vivifying power of science might not be felt, in which the loss arising from want of that certainty of action which mere unenlightened practice can never attain, does not reach an amount which, if stated in figures, would astound the most thoughtless. For instance, the causes which in our great cities hasten the death and debase and embitter the life of so many, have at last been forced by chemists and physiologists on the notice of the public. Look at Dr. Smith's report on the 'Air and Water of Towns,' in our volume; and when we think that the victims of the deadly influences which are there revealed are chiefly found among the people whose industry is the foundation of our greatness,—that every year cut off from the life of each of these is so much subtracted from national wealth,—even were all moral sense or religious feeling dead in us, we must confess that the knowledge which is capable of averting them 'is of use.' The ships that bear the treasures produced by this industry through the world are lost to a fearful amount,—nearly *three* daily. What are they worth—ship, cargo, men?—and most of them perish from want of nautical science or from unscientific construction. How many men have been ruined by searching for minerals, when the merest smattering of geology would have dispelled their delusion? On the other hand, the agricultural produce of our islands might be doubled by a more perfect application of the principles of botany and chemistry. The manufacture of iron has been augmented six-fold by the use of the puddling furnace and the hot-blast,—both gifts of theory. How gigantic a result is this, without reference to the increase in the thousand arts of which this immense supply of that most precious of metals is the exponent."

At the *soirée*, on the following day, Mr. Gassiot exhibited the electric light; but what was said by Mr. Faraday and others on the occasion, would not serve to encourage the ingenious men who are at this time striving to bring it into practical operation.

The papers read in the various sections were numerous—many of them valuable, but they present no particularly salient points. In the mechanical section, Mr. Robert Stephenson, who ably presided, gave an interesting account of the accident to the hydraulic press at the tubular bridge across the Menai Straits. In allusion to a peculiar state of pulsation or vibration observed throughout the tube during the lifting, Professor Willis and Mr. Webster made some remarks. The latter considered that this pulsation might have had some influence in causing the fracture. There might be a conspiration of vibration in the tube and the press, *which would destroy the cohesion in the particles of the metal, and cause the fracture.* An interesting question this, which may show the importance of some recent remarks in The Builder on this very subject of vibration and its effects on iron. Mr. Roberts suggested that in casting the new hydraulic cylinder, the fluid metal should be poured into the mould *spirally*, to obviate the unequal contraction, to which the accident was attributed. The casting, however, has taken place, it is said, on the most approved principle, and after a week's annealing the cylinder will be ready for transmittal to the Menai.*

Mr. Heaton exhibited a clever invention for preventing the oscillation of locomotives on railways.†—Mr. Whishaw stated, as to his

* The *Birmingham Journal* thus reports the conversation:—"Mr. Stephenson proceeded to explain the precautions that had been taken to avoid the consequences of any accident. It was originally intended that the tube should be lifted 6 feet, that a link should then have been taken off, and the space built up. This was happily not carried out, and such was the care taken that as the tube rose men were stealing in, so to speak, small planks of timber. But for these precautions the fall would have been fatal to the whole structure,—for, as it was, it fractured bearers of cast-iron upwards of 500 tons weight. The tube was never for a moment suspended in air; and he had since taken the additional precaution of packing the space between the cross-heads and the pump with small iron wedges. No accident could now take place. The fracture in the cylinder occurred in what might have been considered the very strongest place. The pressure at the time was no more than 3¼ tons to the square inch—by no means an unusual pressure. As connected with the cause of the accident, he might state that a short time previously, when the presses on both ends were working simultaneously, it was remarked that the tube had a *strange tremulous motion along its whole surface.* In a short time it increased until the vibration assumed the character of a short wave. At every action of the pump the whole mass seemed to acquire a state of pulsation, comparable to nothing but the pulse of a man's arm. The presses were stopped, and since, they have only been worked at one end. With respect to the immediate cause of the accident, he might state that the shape of the cylinder-square was not the best, and no doubt the weakness had arisen from unequal cooling.—Dr. Robinson remarked upon the singular fact of the vibration spoken of by Mr. Stephenson. He (Dr. Robinson) presumed that the motion in the end of the tube being raised was reflected from the fixed end, and hence the vibration.—Mr. Stephenson said the fact of his having allowed the damaged cylinder to be used after he knew it was faulty had been strongly commented upon. In answer to that accusation of indiscretion, he begged to state that the fault lay in the collar of the casting, where no pressure came.—Mr. Roberts remarked that the way to obviate vibration was to work the engines at unequal speed. He considered that the shape of the casting was bad, and the mode of casting also not the best. It would greatly improve the strength of such work if spiral casting were to be adopted; that is, to pass the metal into the mould in a spiral direction.—Professor Willis and Mr. Webster followed with some remarks on the subject of vibration; the latter gentleman considering that the pulsation spoken of might have had some influence in causing the fracture. There might be a conspiration of vibration in the tube and the press which would destroy the cohesion in the particles of the metal, and cause the fracture."

† Mr. Heaton proposes to attach a weight with connecting rod, and an auxiliary crank, to the head of the crank pin, equal to the weight of the piston and its gearing, so as to make the weight run to the left hand at the same instant the piston goes to the right. The blow to stop the piston and make it return will be received in the auxiliary crank, instead of in the wheel, producing a neutral point in the centre and steadiness of motion; for when the blow is received in the wheels, the cranks being at right angles, it is communicated through the axle, and gives a twisting motion to the whole framing of the engine.

gutta percha tubing for telegraphs, that he had invented a method of preserving the tube from damage when laid under water. The pipe into which the wire covered with gutta percha was placed, consisted of a tube of metal, jointed at every 2 or 3 feet, as the sinuosities of the river or the various levels of its bed required. Twelve hundred feet had been laid down in the Rhine near to Cologne, and it had answered its purpose well. The tube was payed out from a vessel, and pinned down to the bed of the river, accommodating itself to any sinuosity or change of level. Mr. Roberts described a machine for forming mouldings in sheet metal, which seems worth attention. Mr. Robert Davison explained the desiccating process, the principle of which is, that in drying any body, it is not simply heat that is required, but a current of air also; not merely a moving but a rapid current of air. It is the impulsion of atmospheric air at the velocity of the hurricane, or upwards of 100 miles per hour, combined with the elementary heat, under perfect control, which constitutes the desiccating process. Our readers have much on this subject before them from the advocates of different systems, and may weigh the evidence on both sides.

Last Monday evening was set apart for a discourse from Professor Willis, "On the Application of Mechanical Science to Railways" according to the programme, but which, as the professor himself remarked, ought to have been on *an* application of science to that subject. It will be remembered that soon after the fracture of the Dee-bridge girder, a commission was appointed to inquire into the use of iron for railway bridges, &c. The commission, which included Mr. Willis, have tried a number of experiments on a very large scale at Portsmouth, and have sent in their report, and the object of the lecturer was to put before the members of the association, in a popular form, one of the principal results of the inquiry. Their experiments were made to show the difference of effect on railway girders when a locomotive is at rest upon it and when traveling over, and this important fact was established, namely, that the deflection caused by the weight of the locomotive *was increased in proportion to the velocity*, even as much as three times. The inference, the professor said, seemed painful, namely, that bridges which had been calculated to bear safely the weight of a train which would have to pass over them might not be able to resist the strain caused by it in motion. But he afterwards gave reasons why, in practice, there was not really cause for alarm; but this part of the subject was not made very clear. The curve produced by the deflection through different velocities was shown by simple apparatus, and it was seen that the increased deflection took place, not when the weight was in the middle of the bar, but when in the second half of its length.

The discourse was delivered in the Town-hall, and had a large audience. The ceiling and walls of this fine apartment, by-the-way,* have been chromatized, with good effect, and we may mention that the scaffolding is up for the completion of the back of the building externally, under Mr. Edge, and that masons are preparing the stone-work.

Considerable additions are being made to Queen's College, and, in another part of the town, some industrial schools of Tudor character are nearly completed.

For the Exposition of Industrial Art, a large structure of timber has been erected, under the direction of Mr. Hussey, architect, at a cost of 750*l*. A subscription was raised to defray this and other expenses, but the money taken at the doors, if so applied, will render the subscription unnecessary. Some, however, are anxious that the money received should not be appropriated in this manner, but be applied in the formation of a permanent museum, much to be desired in Birmingham, and we trust they will succeed in effecting this arrangement. So long ago as 1839, when the association met first in Birmingham, the conductor of this journal suggested, through the *Midland Counties Herald*, that a temporary museum of manufacturing processes which had been formed, should be kept together permanently as the nucleus of a perfect collection illustrative of our manufactures, but the time had not then come, and the collection was dispersed. Let us hope for a better result on the present occasion.*

The present exposition is exceedingly interesting, and bears honourable testimony to the advance made in Birmingham in the union of art with manufactures during the last few years. At first sight of the collection our anticipations were scarcely realized, but this was rather owing to our knowledge, bit by bit, of all that had been done, and in consequence of which, therefore, there was little to surprise us,—than to any short-comings on the part of the Birmingham manufacturers. When we remember that the very name of the town as applied to works formerly conveyed a positive condemnation, and then examine the specimens of artistical manufacture now collected, the enormous improvement which has been effected and is going on, becomes strikingly evident. In glass, in porcelain, in silver and plated ware, in iron, forms of great beauty are exhibited, and deserve to be inspected by all who can contrive to pay Birmingham a visit. We should have been glad to have found the names of some of the *designers* of these noticed. One of the tables contains a large collection of French bronzes, the works of various foreign manufacturers, and serves to show how much we have yet to do in this branch of industrial art. The committee acted wisely in admitting these. The proprietors of the table scarcely expected they would have been permitted to exhibit their wares (they are all priced for sale), and said to us candidly, that far more liberality had been shown towards them than Englishmen under similar circumstances would receive in France. We are quite contented that England is, in such feelings, in advance.

The most important contribution by any single firm is the collection of ecclesiastical furniture (for Roman Catholic uses), and decorations, exhibited by Messrs. Hardman and Co. Such an amount of fine work in metal has never before been seen together in modern England. Pastoral staves, candlesticks, brackets, chandeliers, monumental brasses, stained glass, oak cabinets, tapestry, and paper-hangings (the latter executed by Messrs. Crace), assisted by a foreground of tiles by Minton, form a whole of extraordinary excellence. Mr. Hardman, the exception to the rule, has given the name of the designer,—Mr. Pugin.

Many of the series of specimens illustrative of manufacturing processes are very curious, and no less instructive. Some of our readers would stare to see, for example, in the manufacture of a simple brass rack-pulley, that the piece of metal of which it is formed passed through thirty-seven stages.

We must run away, however, just to ask permission at the Workhouse to see the selected plans for the intended Union, a course which we thought necessary, to prevent the possible reproach hereafter that we had promulgated untrue statements, when, being in the town, we might have seen and judged for ourselves. With some little difficulty we found out the retreat of pauperism, and stated our wish and motive. The Clerk of the Guardians, Mr. Corder, a polite, common-sense man, could see no reason why this should be refused, the selected design having been approved by the Poor-law Board and returned, but he had no power to comply. He would, however, obtain authority from some of the guardians, who were then assembling. One was asked, and another was appealed to; but each shook his head, like a true descendant of Lord Burleigh, and it was ultimately decided that a reply could be obtained only by formal application to the Board. Not being disposed to spend in the workhouse of Birmingham the short time we had to stay in the "workshop of the world," waiting the doubtful result of a discussion on this knotty point, we left them in the quiet possession of their plans, and sighed for the hour we had wasted in the ineffectual attempt to fit ourselves to do justice.*

We afterwards looked in at the Exhibition of Modern Works of Art, but found little there beyond pictures already exhibited in London, including some by W. Linton, Inskipp, Stanfield, Collins, Anthony, Etty, Uwins, Leslie, O'Neil, Redgrave, Turner, and others; a pleasant collection, nevertheless, which restored our equanimity, and enabled us to leave Birmingham in better humour than we left the workhouse.

GREENWICH NAVAL GALLERY.—Eight pictures, illustrative of the life of Lord Viscount Nelson, have been purchased by subscription, and deposited in the Naval Gallery of Greenwich Hospital, at a cost of 300*l*., of which the sum of 136*l*. was contributed by Mr. Jasper de Sainte Croix.

* It is 145 feet long, 65 feet wide, and 65 feet high.

* As the suggestion applies now as it did then, we venture to reprint a part of the letter:—

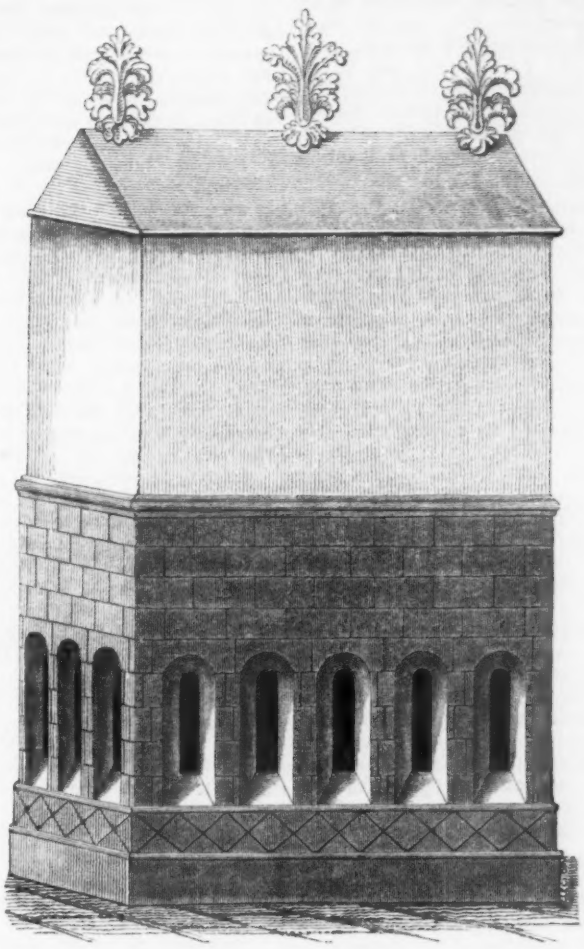
"*To the Editor of the Midland Counties Herald.*

"The collection of manufactured articles and scientific inventions brought together through the exertions of the members of the British Association, and now exhibiting at the Grammar School in this town, is so honourable, not merely to Birmingham but to England, that one cannot but feel regret that at the end of the week the whole will be broken up, and each of the several objects returned to its respective owner. To prevent this *altogether* is not practicable, on account of the great cost of the specimens (perhaps, indeed, it is not even desirable), but with respect to some of the subjects, it seems to me to be absolutely necessary that endeavours should be made to retain them for the public service. I allude, Sir, to the several most interesting *series* of specimens distributed throughout the room, illustrative of different materials and various processes of manufacture: for example, those showing, in all their various stages and applications, copper, iron, lead, steel, and German silver; and the collections illustrative of the manufacture of buttons, pins, files, papier maché, flint-glass, plated articles, and porcelain. These, invaluable as they may become when collected, are comparatively of little cost; and what I would suggest, Sir, is, that a subscription should be made at once to purchase them from their owners; and then, that they should be presented to one of the local museums, or placed in the Town Hall, where they would form a nucleus for a perfect collection, illustrative of our manufactures. Of the value of such a museum, now nowhere existing, it is not necessary to speak. Each of these series may be regarded a a perpetual, although silent *lecturer*: they at once plainly tell their own story, and open the minds of the observers to wonders before unthought of.

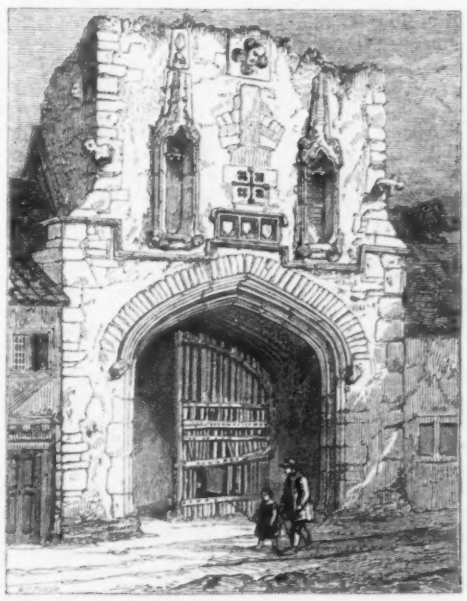
"August, 1839." "GEORGE GODWIN."

* We are informed that at the meeting of the board, after we left, the communication from the Poor-Law Board, expressing approval of the plans of Messrs. Drury and Bateman, which had been recommended for adoption by the architects appointed to examine the competing plans, was read. No discussion ensued, and it is expected that the building will be proceeded with immediately. One out of several fresh correspondents on this subject writes thus:—"There is a curious coincidence about this second competition, which appears to have been as yet overlooked. Upon turning to your journal of the 10th of February, I find a paragraph which begins in this manner:—'The voting in committee on the seven selected plans terminated thus:—Mr. Hemming (Birmingham), 17; Messrs. Drury and Bateman (Birmingham), 16; the rest, nowhere.' And you may now again respond, '*the rest nowhere.*' No doubt the judges, like Brutus and Cassius, are 'honourable men;' but they have made one sad mistake, and appearances are against them." The writer afterwards asked, "What has become of the second premium?"

THE SHRINE OF ST. THOMAS, AT CANTERBURY.



GATE HOUSE, WALSINGHAM PRIORY.



PILGRIMAGES TO WALSINGHAM AND CANTERBURY.

Amongst the many pleasant excursions which the members of the two Archæological Associations have enjoyed, that to Walsingham, when the Institute visited Norwich, stands prominent. The weather was fine, the place itself full of interest, and the host, Mr. Lee Warner, received all with such genuine and warm kindness as greatly to increase their enjoyment.

Amidst the pleasant results of that visit (and every one of these excursions produces more good results than are at once apparent) must be placed a new translation, by Mr. John Gough Nichols, of "The Pilgrimages to St. Mary of Walsingham and St. Thomas of Canterbury," by Erasmus.* Mr. Nichols, the worthy bearer of a worthy name, was peculiarly well fitted for the task, and has brought to bear upon it a large amount of antiquarian knowledge, throwing light on our early religious history and our architectural antiquities.

Our readers will scarcely require to be told that these celebrated colloquies were directed against "such as run mad upon pilgrimages undertaken under pretext of religion." The translator, however, does not put it forth in a polemical spirit, but as illustrating early history; and he shows that the degree of discredit which has been thrown on the descriptive portions of these works was unjust. He found the account of the churches of Walsingham quite correct: "There were two,—the Priory Church, and the wooden Chapel of the Virgin, around which 'the new work' of stone had been erected, but was never finished, just as Erasmus describes it. The two wells, which he mentions, still exist."

We give, as specimens of the engravings with which the book is further illustrated, a view of the Gate-house of Walsingham Priory, and of the Shrine of St. Thomas, at Canterbury, from a pen-and-ink sketch on one of the Cottonian MSS. (Tib. E. viii., fo. 269.)

"The head in the quatrefoil in the front of the gateway, and two smaller ones in the side walls, are portions of the original design, and are intended to represent the porter and warders on the look out."

The shrine at Canterbury is described by Stowe as "builded about a man's height, all of stone; then upward of timber, plaine. * * * The timber-work of this shrine on the outside was covered with plates of gold," &c. "The finials on the crest of the shrine," says Mr. Nichols, "were of silver gilt, the central one weighing 80 ounces, and the two others each 60 ounces." The shrine had in front of it a curious mosaic pavement (which still remains in the cathedral), such as is found at Westminster Abbey, about the shrine of Edward the Confessor.

Mr. Nichols is entitled to praise for this very interesting and scholarly contribution to the library, not alone of the English reader, but of those who, knowing the author in the original, would more fully understand his references and allusions.

* "With the Colloquy on Rash Vows, by the same Author, and his Characters of Archbishop Warham and Dean Colet, and illustrated with Notes, by John Gough Nichols, F.S.A." Westminster: Nichols and Son. 1849.

IS TIME MONEY?

He should possess no ordinary stock of courage who withholds assent to the dogma so pertinaciously upheld and acted upon by a large portion of the world. Yet so far from being received as a canon, it deserves our most serious inquiry, whether the too universal adhesion to it by the commercial community is not one of the causes of that depression which periodically sweeps over the face of mercantile affairs, as surely and naturally as debility and forced inactivity follow a fever in our mortal frame.

It has been truly remarked that men live *quicker* now than they did—that the work of fifty years is compressed into twenty. Yet the fuel that supplies heat to the great commercial hot-house is *human bone and blood*. And it is inevitable that the lower the rank in life the more fatal is the operation of this forcing system. A statesman or philosopher wears out prematurely the scabbard of life by the activity of his trenchant spirit; a poet swims the adverse stream till heart-strings crack in the contest; another throws down the disgustful cup of life scarce tasted; and their premature exit is chronicled in the memories of all who sympathize with men struggling against the chilly tide of the world's selfishness. But who notes the hecatombs offered on the altar of the Moloch of haste? Every additional burden thrown on the edifice of human society, however much it may be felt by the capital and the shaft, presses with a more crushing weight upon the base.

It must, I think, be evident to the most superficial observer, that much of the depression in trade arises from the rapidity with which work is now executed. A tradesman solicits, or tenders for work, and after lowering his prices till a scarcely living profit is attainable (and after figuring in the list of "Blind Builders"), promises to do the work of six days in two. By hard task-masters, long hours of business, and body-destroying and soul-wearying exertions on the part of *employés*, he succeeds—the work is done: *how* done is of no consequence, if he *barely* fulfil his contract, or satisfy the requirements of the man to whom "time is money," and who, as he begrudges the "money" for the execution, begrudges the "time" for examination into the stability and propriety of the work done for him. By this system the master-workman suffers much, but how fare the working hands? Work cannot be made for them; and after doing the six days' work in two (for which they hardly get

three days' pay—perhaps much less), they stand still. If they work at piecework, they lose directly in not receiving wages; if monthly or yearly servants, they are menaced with a prospective and indirect loss in the reduction of establishments and a lowering of salaries.

But in a moral point of view, is time, indeed, to be looked upon only as money? Is no part of it to receive more consideration than if it were mere dross? Was it only given us that we might go on heaping bag upon bag of gold, adding house to house, and acre to acre? If, in fact, every minute were weighed as a broad piece of gold, and every day as an ingot, should we be justified in running the headlong, jostling race we every day pursue? Ask the "Integer vitæ scelerisque purus," to sell you his good opinion or his vote for money, and the honest blood rushes to his face; but his indignation is nullified, his reproach blunted, edge and point, by his rigid adherence to "Time is money." If commercial integrity is "more precious than fine gold," how ought we to estimate the moral culture of the inward man, whose purity and right education is the alone basis of all fair dealing?

Much as we imagine ourselves superior in philosophy and attainments to our continental neighbours, we might learn from them a useful lesson—that of being contented with less money, and devoting more time to æsthetic pursuits, and to the cultivation of all that makes life worth living for. And here suffer me to throw out a hint for thinkers. May not a comparison be drawn, much to our disadvantage, between the mediæval times and our own? I speak architecturally. Look at the works of the men who worked slowly and thought much, and turn to the productions of our day, when men "run up" a church in a few months, a standing monument of their *want* of thought.

It was hoped that when railroads were made, so much time would be saved in travel, as to give greater leisure to the ordinary affairs of life, but the anticipation has not been realized. The fever has grown with what it feeds on. Truly, the demon of unrest has entered into us, and we rush down the steep places to drown ourselves in a sea of troubles.

Festina Lente.

RESTORATION OF ST. PETER'S CHURCH,

FROCESTER, COUNTY OF GLOUCESTER.

This pretty and retired village, through which the line of railway from Gloucester to Bristol runs, and in which village Ralph Bigland, the well-known author of the "History of the County of Gloucester," formerly resided, possesses an old parish church, now about a mile from the village, which has for a period of more than a century lain in a state of desolation and decay, and in the interior of which, and among the tombs of the departed, till very lately, the owl and the bat had found an abode. The restoration of this old parish church (said to be dedicated to St. Peter) has been commenced under the direction of the writer; and a short description of the church, as well as of the restorations about to be effected, may be interesting.

The original fabric appears to have been built about the commencement of the Early English period of ecclesiastical architecture. The plan of this church consisted of a long and narrow nave, 64 feet by 15 feet, a chancel in a continuous line with the nave, and latterly without any separation, internally 20 feet by 15 feet; a north aisle, 20 feet by 13 feet, with a north chapel, separated from this aisle at the eastern end formerly by an oak screen, and at the western end of which was placed the tower, 9 feet by 9 feet internally; and about the middle of the nave, on the south side, was a porch, the side walls of which are perforated, and altogether of a peculiar design. The tower was surmounted with a broach spire, very stumpy in proportion, constructed of oak timber, covered with oak shingles. In the tower were placed six bells. The nave was separated from the north aisle by piers and arches; the piers at the eastern end being circular, and at the western end square. In the chancel existed a piscina of the Early English period; and several flat coffin lids, with various devices of monumental crosses incised on them of the Early English period, as well as stone coffins, have been discovered. The fabric, viz., the nave, aisle, and porch, according to the existing specimens of the windows and doorways, &c., appears to be about the period of Henry the Seventh, 1485, Perpendicular. At the western end of the nave, I should mention, there existed a recess about 3 feet in width by 22 feet in length: this recess was covered over with a lean-to roof,—for what purpose it was used I am desirous of ascertaining.

As to the intended restorations, the walls all round are to be taken down, as well as the piers and arches, and rebuilt on the site of the old foundations, with the exception of the tower, which is to be extended northwards, and the north aisle westwards, thereby increasing the internal area of the building. All the old roofs were constructed of either oak or chesnut timber, consisting of all common rafters, with semi-circular tie pieces underneath, and covered with stone tile. The same construction of roofs is about to be placed on the new walls, the old timbers being reused, as far as they are sound. The present porch, and all the old windows, of four different patterns, are to be repaired and reinserted in the new walls, and some new windows made to correspond. Between the chancel and nave I conclude a rood screen existed, and which formed the only separation between the two. The way leading to the rood loft remained, and underneath the semi-circular carved pieces of the roof, about 7 feet in length, there existed panelling and rib mouldings painted, which was formerly over this rood loft no doubt. The walls of the chancel were in a very bad state of repair, and considerably out of the perpendicular, and the roof had partly fallen in.

This portion of the church is being repaired, under the care of the lay rector (a converted Romanist), and the incumbent (a very low Churchman, and formerly an officer in the army), and I am sorry to say it is about to be restored in the cheapest, plainest, and not altogether with the most substantial materials, the roof timbers being, I understand, about to be worked out of beech timber, and underneath these roof timbers to be plastered. The whole of the other portion of this church—nave, aisle, tower, and porch—is now being restored, at the expense of the parishioners, who have come forward in a praiseworthy and liberal manner, with the assistance of the squire of the parish, Mr. J. A. G. Clarke. The seats, as well as the roof, are being worked out of oak. The few remains left of the old bench-ends had the linen-fold, or scroll pattern, in the panels. The new seats, which are to be without doors, are to be worked according to this pattern; and this church, when completed, will accommodate nearly 300 persons. There is to be a new stone font and pulpit, and an oak reading-desk; and the north chapel (a proposed site for an organ), is to be separated from the aisle by an oak screen, as well as the chancel from the nave. Buttresses are now placed against the side walls, which formerly did not exist. The tower is to be of the same size on plan as the old one, but is to be now carried up 10 feet higher, and the spire is to be of stone, and made more tapering in its proportions than the old one.

The contract for carrying out the restorations of this church amounts to between 1,800*l.* and 1,900*l.* The amount of the subscriptions is at present far short of this, but it is to be hoped this work, now so well begun, will be nevertheless completed in the manner in which it is proposed it should be carried out.

Francis Niblett.

Plate-Glass Manufacture.—A patent has been granted to Mr. Obed Blake, Blackwall, for smoothing plates, sheets, or panes of glass, by means of suction or vacuum blocks, arranged in combination with runners and other machinery as set forth and described, and illustrated by drawings. The suction-blocks are made to adhere to such glass-plates as are already used with the finest emeries in smoothing by hand, and the object of the invention is to imitate this finer work, hitherto done by hand, the courser being already done by machine, with plaster of Paris for adhesion.

OF THE RIGHT TO REMOVE FIXTURES SET UP FOR ORNAMENT OR CONVENIENCE AND DOMESTIC USE.*

The author premises that it must not be forgotten each case must depend, in a great measure, upon its own peculiar facts,—"'That the right (to remove) is an exception only, and though to be fairly considered, is not to be extended;' and that it will be requisite to ascertain whether there be any custom or prevailing usage; what is the nature and construction of the article, its mode of annexation, and the effect of its removal:† these will all prove useful and safe *criteria* in practice, where there is any doubt, or where any new case arises.

Hangings.—In Poole's case, 1 Salk., 368, Lord *Holt* denies the right of a tenant to remove any other description of fixtures, save trade; nevertheless Lord Keeper *Wright*, in Squier *v.* Mayer, 2 Freem. 249, held that hangings nailed to the walls should be accounted as personalty, and go to the executor as against the heir.

Looking Glasses.—So hangings and looking glasses are only matters of ornament and furniture, and not to be taken as part of the house and freehold, but removable by the lessee of the house. Beck *v.* Rebow, 1 P. Wms. 94. See Elwes *v.* Maw, 3 East, 33, per Lord *Ellenborough*.

Tapestry, &c.—So hangings, tapestry, and iron backs to chimneys. Harvey *v.* Harvey, 2 Stra. 1141. *Id.*

Wainscot.—So wainscot fixed by screws, and marble chimney-pieces. Lawton *v.* Lawton, 3 Atk. 15. Ex parte Quincey, per Lord *Hardwick*, Lawton *v.* Salmon, 1 H. Bl. 260. And, it would seem, a cornice fixed with screws. Owen *v.* Cheslyn, 3 Ad. & E. 75.

Chimney-pieces.—An outgoing tenant may remove an ornamental chimney-piece put up by himself during his tenantcy, but not a chimney-piece which is not ornamental. Leach *v.* Thomas, 7 Car. & P. 385, per *Patteson*.

Window-sashes.—So window-sashes which are neither hung nor beaded into the frames, but merely fastened by laths nailed across the frames to prevent their falling in, for they are not fixed to the freehold. Rex *v.* Hedges, 1 Leach, C. C. 201; 2 East, P. C. 590. *n.*

Beds fastened to the Ceiling.—So beds fastened to the ceiling with ropes, or even nails. Ex parte Quincey, 478.

Stoves, Cupboards, &c. — So stoves and grates fixed into the chimney with brickwork, and cupboards supported with holdfasts. Rex *v.* St. Dunstan's, 4 Bl. C. 686, per *Bayley*, J. See Lee *v.* Risdon, 7 Taunt. 191; Colgraves *v.* Dias, 2 B. & C. 76; Lyde *v.* Russell, 1 B. & Al. 194. But see Winn *v.* Ingilby & Hauxwell, 5 B. & Al. 625.

In Birch *v.* Dawson, 6 Carr & P. 658, it is made a *quære* whether carpet tacked to the floor is fixed furniture.

Pumps.—So a pump which was attached to a perpendicular plank resting on the ground at one end, and at the other fastened to the wall by an iron pin, having a head at one end and a screw at the other, which went through the wall. *Tindal*, C. J., observing, 'that the article was one of domestic convenience, was slightly fixed, erected by the tenant, and might be removed entire.' Grimes *v.* Boweren, 6 Bingh. 437.

These articles, being generally affixed by the tenant for his personal comfort and convenience, and being equally useful in another house, and capable of being easily disunited, by which the premises will neither be injured nor left in a worse state than they were before, the tenant may remove.

Doors, Hearths.—But things affixed to the house for the purpose of completing it he cannot take away; thus doors, hearths, windows. Poole's case, 1 Salk. 368.

Veranda.—Nor a veranda placed in front of the house, supported by posts fixed in the ground. Penry *v.* Brown, 2 Stark. N. P. 403.‡

* "From "The Law of Fixtures, &c." By S. G. Grady, Barrister-at-Law. Richards, Fleet-street.

† "Whether a fixture can be removed by a tenant without substantial injury to the premises is a question proper for the jury, upon an issue whether the fixture is removable or not by law. Avery *v.* Cheslyn, 3 Ad. & E. 75; 5 Nev. & M. 372."

‡ "This was an action of covenant by which the defendant undertook to repair, and keep in repair, all erections, buildings, and improvements which might be erected thereon during the term, and yield up the same in good and sufficient repair; and *Abbott J.* held that the veranda fell within the terms of the covenant."

Pillars of Brick and Mortar.—An outgoing tenant has no right to remove pillars of brick and mortar built on a dairy floor to hold pans, although such pillars are not let into the ground. Leach *v.* Thomas, 7 Car. & P. 328, per *Pateson*, J.

Shrubs, &c.—Nor can a tenant (not a gardener) remove shrubs, flowers, &c. planted by him in a garden. Empson *v.* Sodden, 4 B. & Ad. 655.

Bookcase, &c.—A. bequeathed his leasehold messuage, with the grates, stoves, coppers, locks, bolts, keys, bells, and and other fixtures and fixed furniture, to G. for life; and the household goods, furniture, plate, linen, china, books, wine, and liquors, and other properties in the messuage not being comprehended under the preceding terms, fixtures and fixed furniture, to G. absolutely. There were in the messuage looking-glasses standing on chimney-pieces and nailed to the wall, and a bookcase standing on (but not fastened to) brackets, screwed to the wall. It was held that G. took only a life interest in them. Birch *v.* Dawson, 4 N. & M. 22; 2 Ad. & E. 37; 6 Car. and P. 658.

Conservatories.—In Buckland *v.* Butterfield, 4 Moore, 440, it was held that pineries and conservatories were not removable by a tenant. The judgment of Chief Justice *Dallas* being a very important one, and the case itself being considered a leading authority on this class of fixtures, it is better to set it out at length.

'It was an action on the case, tried before Mr. Baron *Graham* at the last assizes at Aylesbury. The question in the cause, as far as related to the motion before the Court, was, whether a conservatory affixed to the house, in the manner specified in the report,* was so affixed as to be an annexation to the freehold, and to make the removal of it waste? In the argument and judgment of the Court of King's Bench, in Elwes *v.* Maw, will be found at length all that can relate to this and other cases of a similar description. It is not necessary to go into the distinctions there pointed out, as they relate to different classes of persons, or to the subject-matter itself of the inquiry. Nothing will here depend on the relation in which the parties stood to each other, or to the distinction between trade and agriculture; for this is merely the case of an ornamental building, constructed by the party for his pleasure, and the question of annexation arises on the facts reported to us; and I say the facts reported, because every case of this sort must depend on its own special and peculiar circumstances. On the one hand, it is clear that many things of an ornamental nature may be in a degree fixed, and yet during the term may be removed; and, on the other hand, it is equally clear that there may be that sort of fixing or annexation which, though the building or thing annexed may have been merely for ornament, will yet make the removal of it waste. The general rule is, that where a lessee, having annexed a personal chattel to the freehold during his term, afterwards takes it away, it is waste. In the progress of time this rule has been relaxed, and many exceptions have been grafted upon it. One has been in favour of matters of ornament,—as ornamental chimney-pieces, pier-glasses, hangings, wainscot fixed only by screws, and the like. Of all these, it is to be observed that they are exceptions only, and therefore, though to be fairly considered, not to be extended; and with respect to one subject in particular, namely, wainscot, Lord *Hardwicke* treated it as a very strong case. Passing over all that relates to trade and agriculture, as not being connected with the present subject, it will be only necessary to advert, as bearing upon it, to the doctrine of Lord *Kenyon*, in Pentan *v.* Robart, referred to at the bar. The case itself was that of a building for the purpose of trade, and consequently standing upon a different ground from the present; but it has been cited for the dictum of Lord *Kenyon*, which seems to treat of greenhouses and hothouses erected by great gardeners and nurserymen as not to be considered as annexed to the freehold. Even if the law were so, which it is not necessary to examine, still, for obvious reasons, such a case would not be similar to the present; but in Elwes *v.* Maw, speaking of this dictum, Lord *Ellenborough* said, "There exists no decided case, and, I believe, no recognized opinion or practice, on either side of Westminster-hall, to warrant such an extension." Allowing, then, that matters of ornament may or may not be removable, and that whether so or not must depend on the particular case, we are of opinion that no case has ever extended the right to remove, nearly so far as it would be extended, if such right were to be established in the present instance, under the facts of the report, to which it will be sufficient to refer; and therefore we agree with the learned judge in thinking that the building in question must be considered as annexed to the freehold, and that, consequently, the removal of it would be waste.'

Any injury, however, which would occur in removing fixtures must be made good by the party severing, and he must leave the premises in all respects as he found them, whether the fixtures be set up for trade or domestic purpose. See Foley & Addenbrooke, 13 M. & W. 199."

* "The conservatory was erected on a brick foundation 15 inches deep, attached to the wall of the dwelling-house by cantilevers let 9 inches into the wall, connected with the parlour chimney by a flue, and having two windows in common with the dwelling-house, and to a pinery erected in the garden, on a brick wall 4 feet deep.

BAD EFFECTS OF THE BRICK DUTIES.

THE following statement in respect of the brick duties has been made by "The Financial Reform Association:"—The duty on bricks was 2s. 6d. per thousand when first imposed, in 1784, but was increased at different periods, from 1794 and 1806, in aid of the war expenditure, to 5s. 10d. per thousand. Additions have been made, higher rates levied on the finer kinds of brick, and drawbacks allowed for damages, which make the present duty to stand at, or near to, 7s. per thousand. Though this be a considerable addition to the price of a cottage containing 15,000, or to an ordinary street house, containing 50,000 bricks, the evil operation of the tax is not seen in the enhanced cost of the house. To avoid the enhancement of cost price, the house is, in many essential parts, weakened, by the absence of bricks which should be used to give it solidity. But the evil influence of the tax is more apparent when examined at the brickfield, where the article is in process of manufacture. There, a certain mould of legal size must be invariably used. A builder might come and say he was desirous of bricks of different sizes, that he might build a house better apportioned, as to strength and solidity, in its different parts; but the exciseman says, "Not so; the law has settled the size of bricks, and the quality too." The builder may rejoin, "Is my experience in the construction of dwellings, and churches, and railway arches, to go for nothing? Has the world learned nothing since 1784?" The exciseman says, "Railway arches might not be known in 1784; but the law of that time has ruled what kind of bricks you are to build them of."

Next, there are the makers of the bricks. In the neighbourhood of large towns the excisemen visit the brickfields pretty regularly, to take account of the work done, perhaps once a-day; but in remoter places they cannot do so, unless there were an exciseman appointed to each place of work. For this reason, villagers or farmers, who would make their own bricks to build their own houses, must not do so, because they have not an exciseman living beside them. They must send to great distances, where it is convenient to make the article under the supervision of the excise. Even where the officers visit the works once a-day, the inconvenience and loss to the operative at work are ever recurring. They are bound to lay their moulded clay down on certain spaces, and on those only, from which they must not remove the pieces until account has been taken of them for duty. Nor must they lay more on those given spaces than the officer allows: if full, they must stop work. If rain falls, and reduces the moulded clay to mud, or otherwise disfigures it, so as to be unfit to be sent to the kiln for burning, *the duty must be paid*, though the clay be returned to the pit, to be again worked up for the moulder. The lost labour falls to the operative brickmakers, while their employers lose the duty. Those accidents from weather would seldom occur if the makers were allowed to remove their bricks at any time, or lay them in any place.

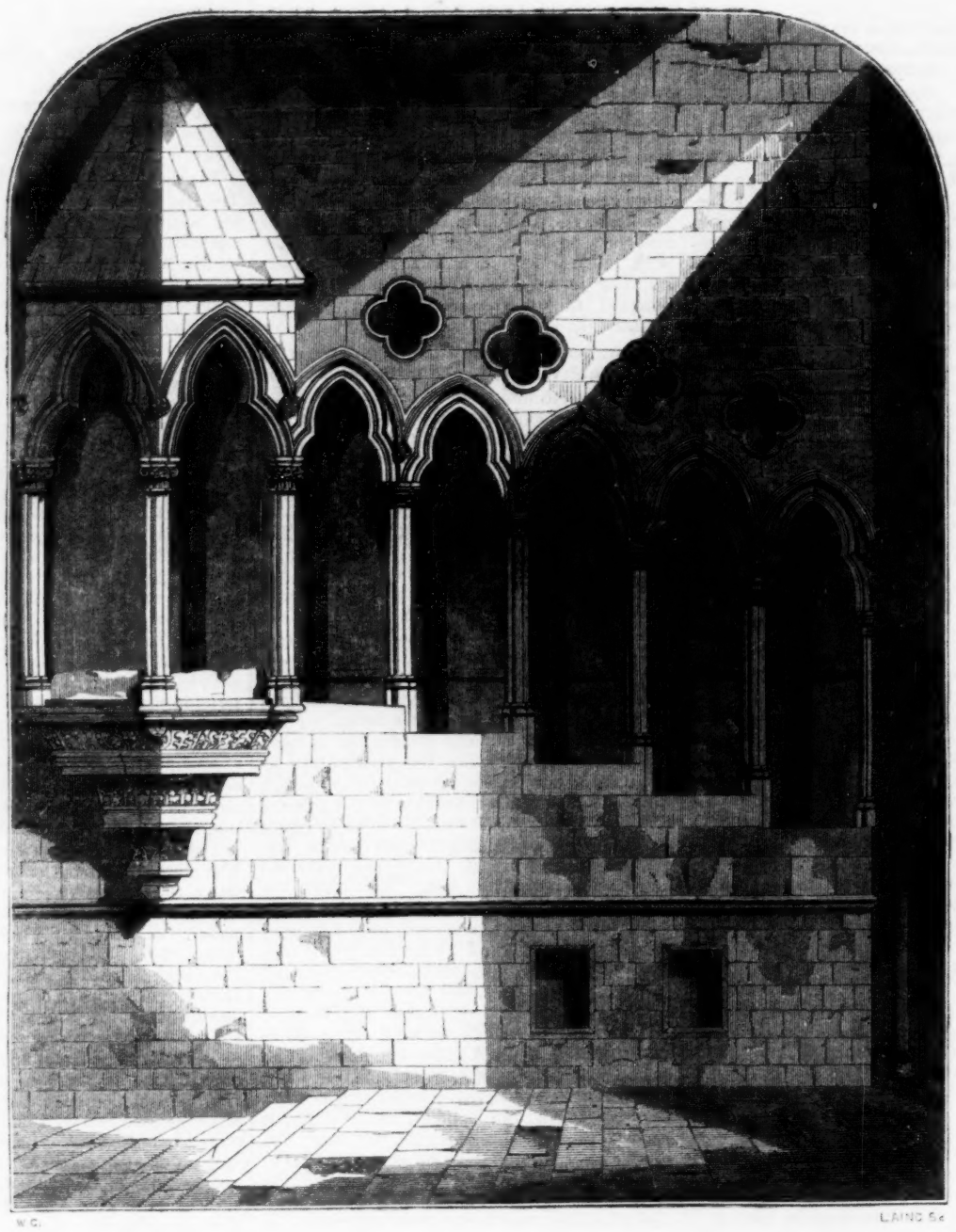
In every respect the brick duty is an unqualified evil. It obstructs the operations of an important branch of industry, and ends by endangering human life in habitations to which is denied the application of a sound constructive science.

CHURCHES AND SCHOOLS.

WAVENDON CHURCH was consecrated on Tuesday week. The whole body of the edifice has been rebuilt, except the tower. The restoration, as it is called, was made from plans by Mr. Butterfield, architect. The walls are of limestone, with dressings of Caen stone. The roofs of the nave and aisles are covered with lead. The whole is in the decorated style, and consists of nave, aisles, and chancel, with vestry, &c. The old tower remains. The west window, a gift of Mr. H. C. Hoare, is filled with stained glass, and is seen through the open tower arch in the interior, from the opposite end of the church. The east window is a decorated one, with four lights, and according to the *Bedford Times*, is a gift by Miss Prince, as another, on the north is, by Miss Hoare. The chancel ceiling is painted blue, with gold stars, and the windows are all of stained glass. The gates of the chancel screen, a low one of stone, are of metal, with ornamental workmanship in burnished brass and colours. There are no pews in the church. The open benches have carved oak ends. The whole floor is paved with black and red tiles, encaustic with patterns in the chancel.——A committee has been appointed to obtain estimates and subscriptions for the repewing of St. Edward's Church, Cambridge.——Some workmen employed in repairing the interior of Chelsworth Church, near Biddlestone, have discovered a painting, in good preservation, over the chancel arch. It represents the Day of Judgment. The church formerly belonged to the abbey of Bury St. Edmund's.——The chancel of Little Wilbraham Church has been restored by the rector. A new east window, decorated, has been added. The parishioners are restoring the south aisle windows, and nave roof, &c. Opposite this church new schools and teacher's dwellings, are in course of erection.——Balsham Church is under repair and restoration. ——All Saints, Maidstone, has been reopened, after having undergone some long-talked-of alterations and restorations. Cumbrous galleries have been removed, and pews of all sorts replaced by open benches, with carved oak poppy heads. The works have been done under the architectural superintendence of Mr. Carpenter, and by contract with Mr. Cobb, builder. The removal of the galleries has, it is said, improved the transmission of sound and the hearing throughout the church.—— A new school and teachers' dwellings have been founded at Nettleton, Wilts, on a plan furnished by Mr. Salway, of Chippenham, architect: mason, Mr. T. Brookman.——Some further repairs or improvements have been made at Astley Church, under the superintendence of Mr. Dodson, of Worcester.—— Llan-Gasty-Tal-Y-Llyn Church, Brecon, has been restored by Mr. Pravson, of London, architect. The tower has been raised 12 feet, and 'the great banner of the cross now floats from its summit.' The interior space under the tower has been laid open with its lofty arch to the nave, and provided with open seats. The roofs are open, showing woodwork in the Early English style of the building. The whole area of the church is paved with encaustic tiles. The chancel windows are filled with stained glass, by Wailes. The font, a large one, is of Bath stone, carved. The south porch door is of oak, massive, with floriated ironwork.——To complete the erection of St. Thomas's, Wigan, Mr. H. Gaskell has given the munificent sum of a thousand guineas. ——The foundation stone of St. Luke's Free Church was laid in Great Hamilton-street, Glasgow, on Monday week. It is to accommodate 800. Mr. Wylson is the architect. The edifice is to be in the Pointed style, with tower at the south-east corner.——St. Ninian's Cathedral (Episcopal), at Perth, was to be formally founded on the 15th inst,, by the laying of the chief stone.

STONE PULPIT, EARLY ENGLISH PERIOD.

[CIRCA 1270.]



W.G. LAING Sc

EARLY ENGLISH STONE PULPITS.

In the course of a recent notice of proceedings in Chester we promised a view of the Early English pulpit in the Refectory there;—one of the very few remaining examples of pulpits of that era. By a rare accident, however, the drawing of it when put on the wood was not reversed, and the engraving was therefore made to show it on the *north* side of the refectory instead of the *south*. We had in consequence abandoned the idea of publishing it, but being pressed by some of our correspondents to keep the promise, we now give it, not as a view of the Chester pulpit, although it really is so with the exception mentioned, but simply as an example of a stone pulpit in the Early English style.

The steps, it will be seen, are formed in the thickness of the wall, and the pulpit is corbelled out. The width of the stairs is 2 feet 8 inches. The height of each opening to apex 7 feet 6 inches, and the floor of the pulpit is 4 feet 3 inches from the ground.*

* The details of this interesting specimen are given in Mr. Dollman's "Examples of Antient Pulpits," published by G. Bell.

MATERIALS FOR BUILDING WORKS.

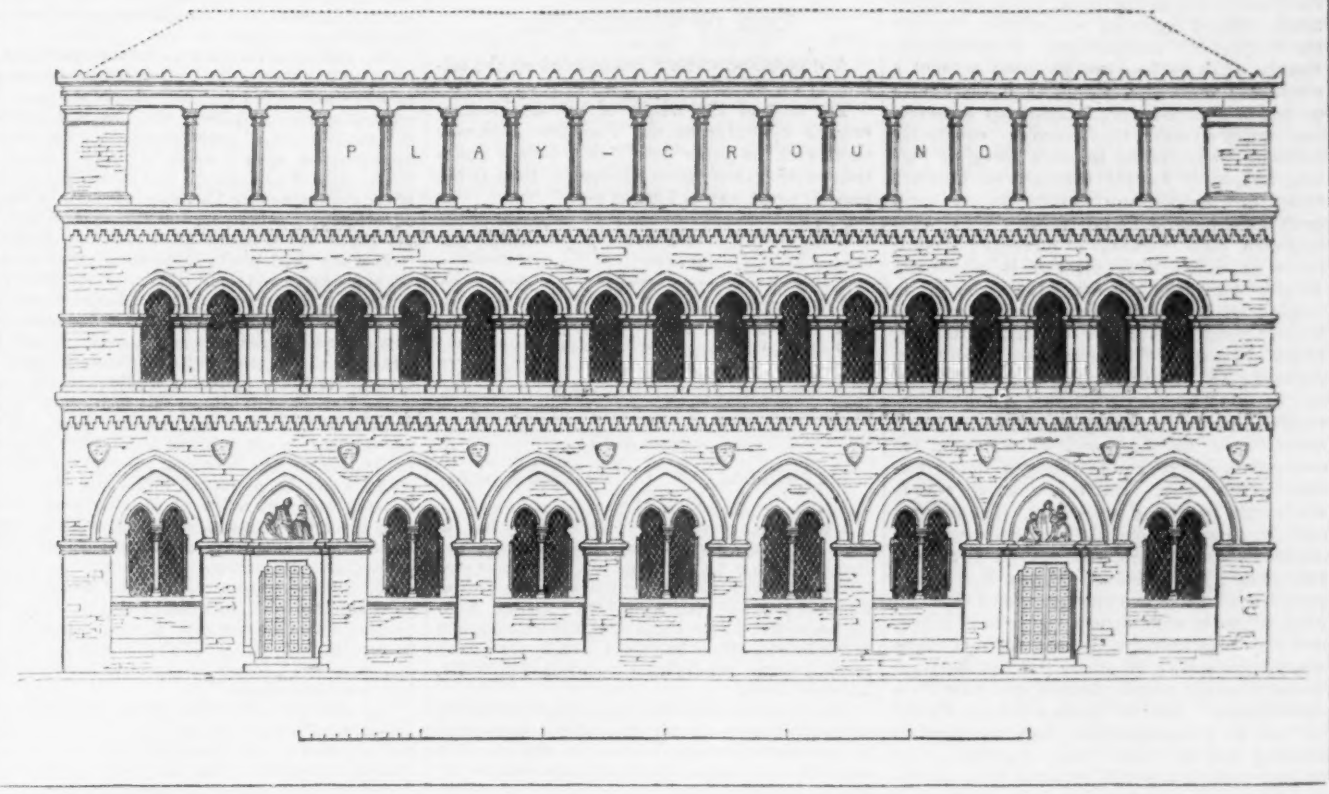
The durability of materials employed in building works is a question too little attended to; the present cost, alas, deludes the majority of those whose province is to decide in these matters. Quantity for money is the popular mania, in the stead of quality, which our forefathers loved. The builders of the 19th century may carry the palm far above all preceding time for gigantic and rapidly-conceived and executed works, but those who follow us will find out many secrets arising out of this rapid and cheap style of building. But the topic I wish now to fix attention to more particularly is the very great neglect of attention in selecting the best materials for the character of any proposed work: when I use the term best, I mean best for its use consistent with durability, economy, and good taste: these conditions, in my opinion, should be sought to be combined as much as possible. The architect has a noble field in aiming to design an effective, economical, and durable building. I will now advert to two or three illustrations of my argument as to the selection of materials.

In the recently-published Blackwall Railway report, the parapet walls enclosing the sides of the railway are said to have cost above 2,600*l*. The purpose of these walls is sufficiently obvious now that locomotives are employed, but why brick walls were resorted to is not so obvious,—the iron rods and standards forming the original fence are built in: the contriver of this work surely forgot the important principle of the expansion and contraction of iron-work under different conditions of the thermometer. Again, the constant expense of keeping the joints of a 9-inch wall pointed up on both sides would have seemed a strong reason why another method of enclosure should have been sought out.

Most of our railway companies will find out by bitter experience the ultimate cost of wooden erections: miles of upright matched boarding have been fixed during the last five years on the sides of the platforms at the various stations. Travelling the other day on the North Kent line, I observed (at Woolwich, I think) thin deal close-boarded fencing, and fir posts and rails, being fixed. What will be the ultimate cost of these fences, kept painted on both sides; and how many years will these fences last? Speaking of fences, I will also advert to one, now almost prostrate, in the new Victoria-park, near Hackney: fir posts have been used, and they have rotted off at the level of the ground, as might have been expected. Now, this fencing cannot have been put up more than three years;—is not this a miserable waste of public money? A vast deal has been ex-

NORTHERN SCHOOLS, ST. MARTIN'S-IN-THE-FIELDS, LONDON.

Mr. JAMES WILD, Architect.



pended on lodges, lakes, gates, &c., to this park, surely it would have been better policy to have saved a little elsewhere, and fixed English oak posts to their fencing.

More Anon.

NEW NORTHERN SCHOOLS, SAINT MARTIN'S-IN-THE-FIELDS, LONDON.

Annexed we give the elevation of the Northern Schools for St. Martin's-in-the-Fields, intended to be built in Castle-street, under the superintendence of Mr. Wild, as stated in our last number.

The frontage of the building is 100 feet: on the first floor this length, by 24 ft. 6in., is divided into two school-rooms, one for 200 boys and the other for 200 girls; on the ground floor there is a school-room for 320 infants—thus making 720 children in all.

The building will be faced with red brick; the arches and moulding to be rubbed and gauged; the columns and architrave of the gallery or playground, which extends over the top of the whole, are of Caen stone. The style approximates to the Gothic of the north of Italy.

The amount of the contract entered into by Messrs. Haward and Nixon is 2,433*l.**

The doors are to be of oak, panelled (as shown in the design), and are further to be ornamented with bronze studs. The sculpture over the doors is only proposed, and is not included in the estimate: probably there will be inscriptions instead.

From the height of the building and the width of the street, the roof cannot be seen, and, therefore, forms no part of the design.

Cheapening Dwellings for the Poor.—It is supposed that one-fourth of the cost of a dwelling which lets for half-a-crown or three shillings a-week, is caused by the expense of the title-deeds and the tax on wood and bricks used in its construction. Of course the owner of such property must be remunerated, and he therefore charges sevenpence halfpenny or ninepence a-week to cover these burdens. Government affect to regret that the working classes are crowded together, which looks very like hypocrisy, as it is in their power to prevent it by reducing the price of buildings, and, consequently, lessening rents. R.

* The highest of seventeen tenders received was 2,774*l.*

NEW PRESBYTERIAN CHURCH, MANCHESTER.

The foundation stone of a new church was laid in Grosvenor-square, on Wednesday week. It will be arranged to contain 1,090 sittings, including those of 150 children. The body of the edifice will be approached by a flight of steps from the square, 6 feet above the street. The length of it will be 72 feet, and breadth 51 feet. A further mass of building for sessions-house, vestry, and schools will extend to the extreme depth of the land, bounded by Chatham-street, 60 feet in length by 36 feet. A large lecture-room is to extend under the body of the church, and be of the same dimension. The design appears to be somewhat curious. It is thus described in a Manchester paper:—"The style of architecture is Roman Corinthian. The front to Grosvenor-square has a portico in antis, with Corinthian columns and pilasters at each angle, surmounted by two cupolas, which are to be executed in stone. The novelty of this part of the design is much more remarkable than either its appropriateness or its success. Not only are turrets or cupolas at the base angles of the pediment of a Grecian building wholly unauthorized in architecture, but they are totally opposed to the principles upon which its beauty depends. And, in the present case, there is the further objection that the turrets are themselves exceedingly ugly piles, and, with their heavy and clumsy pillars, and massive buttresses, are about as little suited to the light and graceful elegance of a Corinthian building as anything that can well be imagined. Besides, the architects have not merely introduced turrets into the design, but they actually seem intending to bind them together by a blank curtain wall, thus giving to the edifice a square instead of an angular termination; and producing, as it seems to us, a most clumsy and awkward effect. We would fain hope that it is not yet too late to re-consider these parts of the design; for we are sure that the edifice would be much improved by their omission." The architects are Messrs. Starkey and Cuffley, of Manchester.

Another Pavement at Cirencester.—We learn that on Wednesday in last week *another pavement* was discovered at Cirencester,—making the sixth that has been found upon the spot that has recently excited so much interest.

CUTTING BUILDERS AND ARCHITECTS.

Sir,—In your columns I frequently find the architects individually descanting upon the subject of competitions. I much wish that the whole profession would feel it to be their duty as well as their advantage to promote the interests of the respectable portion of the building trade in every branch, by strenuously refusing in all competitions to superintend the execution of works under the lowest estimate, unless it is in their opinion adequate to afford a remunerating profit to an expert tradesman. In the present state of things, the profession must be fully aware, from their experience and knowledge of the cost of material and labour, that "blind or roguish builders" are running away with a great portion of the business, and I regret to add of my own knowledge, that it is in a great measure attributable to the readiness with which the profession fall into the plan (or advise employers) of obtaining competition for everything, thus inducing even the most respectable established tradesman to unnecessarily curtail his profit, in the hope of keeping his customer. As to a combination of the building trade, it is completely out of the question while so many are to be found who look to the bankruptcy and insolvent courts as the only mode of settling with their creditors, and also when gentlemen taking houses allow themselves to be duped into the mode of employing the merely office-keeping house-agents with which the town abounds, to get the repairs and decorations done for them,—men who, totally ignorant of the nature of the business, or the quality of a single article used, let out the work to poor competing task-masters, at an enormous profit to themselves, and very generally at a loss, or near a kin to it, to the poor fellow employed, while the gentleman gets his work but half, or very superficially executed, but which he does not discover until some time after he has paid for it.

A Builder.

Mr. John Woolley.—Some of our readers will hear with regret of the premature death of Mr. John Woolley. Mr. Woolley was a highly accomplished member of the profession, and an excellent man; had he been led to practice (his circumstances rendered it unnecessary), he would have distinguished himself in his art. He was a member of the Council of the Institute. We lose in him an amiable friend.

MANAGEMENT OF COMPETITIONS.

SIR,—That not only some few, but nearly the whole, of the profession should be slumbering—still putting up with the direful losses and insults hourly offered them by committees, through the medium of "competitions," is astonishing. But the truth is, they are as sheep without a shepherd; wandering about, as if there were no end to their journey; keeping up a harassing warfare with the enemy; constantly suffering by travelling in mere foraging parties, instead of uniting together as brothers under one banner, and fighting in one rank against their common oppressor. They have forgotten that "Union is strength;" or, if borne in mind, their practice is essentially different from the precept. Let it be so no longer: let the shrill blast of the trumpet, blown through the organs of THE BUILDER, be heard through the length and breadth of the land; and, above all, let it be responded to. If one "monster meeting" is too inconvenient, let each county assemble at each county town, and there, with united voice, for ever put an end to competitions, if found unable to alter them. But this extreme course will hardly be found necessary. Resolutions can be come to, placing the matter on its proper footing. Then, and not till then, will competition be valuable. When that happy period shall arrive, we may look for a new and glorious era in architecture. It is to be hoped that the "Institute" will show that it is really what it professes; otherwise the Architectural Association will reap the laurels, and wear them with honour. Each of these meetings should be put in communication with the London meeting, and the whole body organized. As one suggestion, I would recommend a resolution to the effect that a plan and elevation of the selected design in every competition be engraved by the committee, and distributed to every competitor. W. W.

DRAINAGE OF LONDON PLANS.

THE following note gives the substance of five others received by us:—Will you kindly inquire how it is that parties who are desirous to compete for the drainage of London are not furnished with the necessary preliminary information, as it was stated would be afforded them by the metropolitan commissioners? It appears to me now, that although this step (taken two years too late) has the semblance of an open question, there is still an under current at work that will render it almost a mere waste of time entering into such a competition. I think the question of the entire drainage, &c., of London is one of so much importance that the plans submitted should be referred to a competent board of civil engineers—say the council of the Institute, notwithstanding it does not exactly coincide with a theory widely promulgated. If any proof were wanting of the correctness of this opinion, it is the fact that the quasi-scientific mountain (alias the Metropolitan Commission) has been in labour nearly two years, and has produced something less than a mouse.

NEW SCHOOLS AT WALSALL.

THE Free Grammar Schools at Walsall were founded by Queen Mary, and are divided into grammar and commercial schools, under the control of ten governors. New buildings for this foundation are now in progress, under the superintendence of Mr. E. Adams, architect. They comprise a school-room for 150 boys with an open loggia underneath of equal area, a board-room (20 by 16), class-room (30 by 16), and two assembling-rooms (each 20 by 16); also three houses for the masters: the first master's house contains twelve rooms, the second master's nine rooms, and the third master's six rooms; this is exclusive of cellarage to each house.

The principal frontage is 148 feet long. The dimensions of the school-room are 70 feet by 30 feet, by 30 feet in height.

The buildings are Tudor in character, faced with picked red bricks, and the quoins, mouldings, &c., are of stone.

The whole of the works, including 880 feet in length of fence walling and several thousand yards of earthwork, are contracted for by Mr. Highway, of Walsall, for the sum of 4,530*l.*, exclusive, however, of the stoves, chimney-pieces, and desks in school-rooms.

COST OF WORKHOUSES.

A CORRESPONDENT has handed us the following statement:—

The cost of the whole of the workhouses erected by order of the Poor-law Commissioners in the years 1836-7-8-9 (when materials were much more expensive than at the present time) was as follows:—

	Number of Workhouses built.	No. of inmates.	Cost.	Average per head.
1836	127	36,056	£659,154	£18 5
1837	86	21,132	403,342	19 1
1838	92	20,862	404,179	19 7
1839	18	4,425	87,917	19 17
				£76 10

being an average of 19*l.* 2*s.* 6*d.* per inmate.

METROPOLITAN COMMISSION OF SEWERS.

A GENERAL court was held on Thursday last, at the Court-house, Greek-street, Soho-square. The Earl of Carlisle in the chair.—A report was presented by Messrs. Lovick and Cresy, on the present state and proposed drainage of the Potteries, Kensington.—Mr. Leslie urged that the improvement of this locality should be carried out by the owners of the property, which view was concurred in by Mr. Lambert Jones.

Mr. Chadwick vindicated the principle which had been agreed upon in the case of the drainage of Gulston-street, Jennings's-buildings, and also with regard to Sydenham. Besides, insurmountable difficulties presented themselves in the way of ownership, as the holdings were so various that in many cases improvements charged upon the owners would amount to a confiscation of the rents for the whole term of their ownership.

Mr. Leslie replied, and contended that before moving in these matters, they ought to determine the questions of the outfalls, water supply, and house drainage. He also ridiculed the idea of this court going into the money-market to borrow every 40*l.* or 50*l.* required for this purpose.

Mr. Chadwick justified the use of tubular drainage, as laid down in the cloisters, Westminster, Gulston-street, and other neighbourhoods, by means of which the localities were kept quite clear, which previously required (the cloisters, for instance) 400 loads of refuse to be removed to the Thames.—The report was finally ordered to be printed.—In answer to a question, Mr. Gotto stated that no steps whatever had been taken with regard to the proposed works for Jennings's-buildings, Kensington, or with those for Carner-street, St. Giles's.

Mr. Lambert Jones complained that no relief was afforded to the inhabitants of Holloway, who had for years been rated to the sewers-rates, while attention was given to districts that had never paid one farthing towards them.

The Sheen District.—In reference to a recommendation of the Works Committee, that Messrs. Donaldson and Bazalgette's application as to the employment of levellers, and making trial-pits in the Sheen district, be acceded to,

Mr. Leslie wished to know how it was that these levels could not be obtained from the Ordnance?—Mr. Austin said the levels had certainly been taken by the Ordnance, but points of connection would be required, and he thought tracings of them might be obtained.

Mr. Jones said the officers of the commission were engaged in the out districts, such as Sydenham, Richmond, and other healthy places, while those who were suffering from want of drainage were neglected.

The Earl of Carlisle believed that it would be desirable to proceed with all speed in those places that had long contributed to the rates, but, at the same time, they could not shut their eyes to the claims of some of the outer districts, such as Brentford, Richmond, and other places, which were the seats of cholera and disease.

The recommendation was then agreed to.

Mile-end New Town.—A report was presented by Mr. J. Roe, on the drainage of Mile-end New Town, which stated that cholera and other diseases existed there to a great extent. There were 71 cesspools, which were filled to overflowing with the most offensive exhalations. It recommended that certain improvements be effected, to be defrayed by means of an improvement rate.—Dr. S. Smith bore testimony to the necessity of immediate measures for the improvement of this district, and the recommendation was put and unanimously agreed to.

Drainage of Richmond.—A letter was received from the authorities of Richmond, who concurred in the recommendation of Mr. G. Donaldson for the drainage of the neighbourhood.—Mr. Chadwick moved a series of resolutions, to the effect that a system of tubular pipes be constructed, that the amount of money necessary be borrowed on the credit of the rates, and that tubular permeable drains be laid down.—Agreed to.

Mr. Bullar, in reference to certain resolutions he intended to move on the subject of house drainage, said he would rather that they should stand on the paper as notice of motion.—Mr. Chadwick believed the subject was of great importance, and that a determination upon it would be gladly received by the builders of the country, and he had the opinion of the chairman of the Carpenter's Society in favour of that course.—Postponed.—The next motion on the paper was a notice given by Mr. Leslie,—"That the Trial Works Committee, on account of the expenditure and small results, be abolished."

Lord Carlisle trusted that Mr. Leslie would see the propriety of postponing his motion until that committee had made their report.—Mr. L. said he was quite willing to do so if there was a prospect of that report being presented within a week.

The Rev. Edward Murray said their report would be presented with the least possible delay, but he was unable to speak in behalf of the other members of the Committee: he could not promise that the report would be presented within that time. He was not, however, aware of what information was sought, or what explanations were required.—Mr. L. said then in that case he thought he had better proceed with his motion.

Mr. Bullar then rose, and said that if that motion was proceeded with, he should feel it to be his duty to move an amendment upon it, the terms of which he would read, viz.—"That the existing Metropolitan Sewers Commission be superseded with the least practicable delay."

The Earl of Carlisle believed the Committee very properly objected to presenting their report, until they obtained all the information they required, and thought the motion should be postponed until that period arrived.—After conversation, the motion was postponed till the next court.

The Experiments of the Trial Committee.—Mr. Leslie complained of the acts of two members of the Committee, in expending a sum of money in erecting a ventilating shaft at Bermondsey, although at the last Court it had been determined that no expense should be incurred for that purpose.

Mr. Murray justified the acts of the committee, and said it was in consequence of the very pressing solicitation of the deputation from Bermondsey as to immediate measures, and the success that had followed the adoption of a ventilating shaft in Harley-street, that the experiment had been tried in this neighbourhood.

A statement of the cost of the experiments was ordered to be laid before the next Court.

Several works were ordered, and the Court adjourned.

Books.

The First Principles of Artificial Manuring. A lecture by JOHN RYAN, L.L.D., M.D. Simpkin and Marshall. London: 1849.

THE object of this lecture is first to inquire into the principal causes of the conditions which are denominated *sterility* and *fertility*; and secondly, to discuss the means of preventing the one and of rendering permanent the other. Dr. Ryan has carried out this intention in a perspicuous and simple manner, and the pamphlet is calculated to remove many erroneous notions in respect of artificial manures; and, by showing how entirely the physical and chemical condition of the soil may be changed, lead our agriculturists to take science to their aid and effect most profitable improvements.

Miscellanea.

GALLOWAY'S ROTARY ENGINE.—Mr. Elijah Galloway, C.E., in claiming the invention of a rotary engine, of the patent for which the Hon. Captain Fitzmaurice holds a share, and under whose name the invention had been noticed in the *Times*,—in the same paper remarks that he is induced, on public grounds, to make the claim, as he perceives a growing practice among the assignees of patents to give the invention their own names, which appears to him just as reasonable as if we only knew Bolton in the steam-engine, or the publishers, Murray and Constable, in the works of Byron and of Scott. Mr. Galloway declares, that in this way he had already lost all nominal honour in 'Morgan's wheel' or feathering paddle, though himself the inventor.

PROJECTED WORKS.—Advertisements have been issued for tenders, by a date not specified, for the erection of industrial schools, &c., in St. Pancras parish; by 1st October, for rebuilding Great Shelford Vicarage; by 22nd inst., for the erection of a new school-house, with boundary wall, at Godmanchester; by 6th October, for the works connected with the building of a bank and dwelling-house, at Carlisle; by 26th inst., for the erection of schools, dormitories, workshops, &c., for 600 children, at Penge, Surrey; by 27th, for 1,800 tons of rails, 700 tons of chairs, and 60,000 sleepers, &c., for the Birkenhead, Lancashire, and Cheshire Railway; by 1st October, for the supply of flints, whinstone, granite, &c., for St. George the Martyr, Southwark; by 26th inst., for making the turnpike road from Tinsley to Sheffield, and repairs; by 9th October, for pig lead and white lead, for Navy dockyards; by 25th, for the erection of two third-rate houses at Whitechapel; and by 10th October, for building an infirmary, with laundry wash-house, &c., for the St. Olave Union Workhouse, Southwark.

RAILWAY JOTTINGS.—The contract for the various works in making the Blyth and Tyne Railway, including the large viaduct over the river Blyth, near to Blyth, has been taken by Mr. Richard Cail, of Newcastle.——Third-class carriages are to be attached to the trains leaving London and Edinburgh every Saturday, so that the working classes can go through either way for 30s.——A correspondent of the *Aberdeen Herald* reports the fall of two or more arches of a railway bridge across the Bervie, on the north of Scotland route. The same work, it is stated, had been already "altered from its foundations from Mr. Gibb's plan, by the new engineers." It would appear, however, that the bridge is not of stone.——The engine drivers on the Eastern Counties line have intimated that they will leave the line unless a stop be put to a system of discharging the experienced hands so soon as they reach, in the company's own scale of wages, 7s. 6d. a-day, and substituting young firemen then at 4s. 6d. to 5s. 6d. a-day. The drivers dread that a clean sweep of the whole corps is thus contemplated, in their dismissal so soon as they have successively reached that settled point of increase in their wages treacherously set before them, like the good things before the eyes of the poor donkey, stuck on the point of its own rider's stick, as an inducement to get on.——The net work of railways in France covers an extent of 5,525 kilometres, of which 2,888 are, or soon will be, ready for traffic. The total sum to be expended is 53,535,000 f., of which 59 per cent. has already been expended.

DRAINAGE OF TOWNS.—The expense of putting Worcester into good sanitary condition has been estimated by Mr. Austin at 47,000*l.*, including 23,000*l.* for machinery and works for collecting and distributing the city sewage for agricultural purposes, and also 10,000*l.* for the erection of baths and washhouses.——A survey of sewers and drains at Sheffield is in progress, with the view of ascertaining the best mode of securing an uninterrupted efflux of their contents into a capacious general outlet proposed to be opened to the Don at Attercliffe. —— The complete sewerage of Winchester, according to a semi-official announcement, will cost 4,500*l.*——A company has been established at Leeds for the purpose of converting the contents of the sewers, cesspools, &c., into manure.

WINDOW SASHES FOR LUNATIC ASYLUMS, &c.—Mr. Thomas Melling, of the Rainhill Iron-works, near Liverpool, has taken out a patent for a new arrangement of apparatus for window sashes, in lieu of sash weights and pulleys, by which space is open for ventilation, while the possibility of escape through such opening, or persons entering from without, is precluded. A rack is fastened on the inside of each outer rail of the upper sash, and also on the outside of the lower one. A shaft crosses the centre of the window frame between the two sashes, at each end of which is fixed a pinion, which takes into the two pairs of racks, by which arrangement, on raising the lower sash by the action of the racks and pinions, the upper one is lowered to the same extent, and, according to the length of the rack, the spaces for the admission of air may be regulated to any width required.

THE METROPOLITAN FEVER-STILLS.—The Board of Health seem to be now fully awake to the necessity of suppressing these loathsome cancers in the midst of human vitality. They have issued a notification to churchwardens, overseers, and other persons, on the subject, intimating that they are prepared to adopt measures for the prevention of intramural interments, wherever, on the report of an inspector, based on the Nuisances Removal and Diseases Prevention Act, it shall appear that danger to health results, but recommending their voluntary abandonment forthwith. The board is also otherwise vigorously at work in the promotion of sanitary reform. They have just instituted a prosecution against the City Guardians, one and all, for neglecting their orders on various points. The people themselves are astir for the immediate suppression of intramural burial. A meeting of the "Metropolitan Society" for this abolition was held in Blackfriars on the 18th inst., when our suggestion to memorialize the Home Secretary for an Order in Council for their suppression was adopted. The press and its correspondents are also beginning to insist on the same course.

PROVINCIAL.—The value of house property in Lincoln has of late, it is said, been seriously on the decline. Some premises worth near 3,000*l.* last year have recently sold for 1,900*l.* This state of things has been attributed to the alleged *artificial* value of such property formerly; a way of putting it which seems to make little difference as regards the fact of the decline.——We hear that in the Thetford Abbey grounds articles of archæological interest are daily turning up. An explanation of them will be given at the joint meeting of the Suffolk and Norfolk Archæological Societies on 27th inst. The base of two columns on the sides of the principal arch, a Roman pavement with tiles coloured and glazed, and a tomb, at present unopened, have been already it seems discovered.——The works for erecting St. George's schools, Sunderland, were let on the 18th inst. The design includes a classical school, girls' school, and three class-rooms, on the ground-floor, and one large general school with simultaneous gallery in the transept, formed over the class-rooms, on the upper floor. The upper school is to have an open timber roof. The style selected is the palazzo Italian, and the whole of the building is to be of stone. Mr. Oliver is the architect.——The operations for the projected improvement of Princes-street Gardens, Edinburgh, are now in progress. Estimates for the terrace, parapets, and stairs are being obtained, and meanwhile the terrace ground is being laid out on the north side and a retaining wall built on the south.

THE SOMERSETSHIRE ARCHÆOLOGICAL SOCIETY will hold their first general meeting at the Assembly-rooms, Taunton, on the 26th inst.

MANCHESTER CATHEDRAL.—Mr. Gregan and Mr. Bellhouse have issued a report on the cathedral, showing the miserable and dilapidated state of the stone-work in general. It is to be hoped this will lead to restoration.

BLIND BUILDERS.—On the 10th, at the office of Mr. G. Allin, architect, St. Ives, were opened the following tenders for the restoration of the exterior of the parish church of Hilton, Hunts:—

Parker, Thrapston	£311
David	288
Cade, Alconbury	270
Beldom, Fenstanton	266
Smallbones, St. Ives	256
Smith and Co., Fenstanton	255
Bunting and Harrison, ditto	231
Harrat and Bland, Huntingdon	150

The following is a list of tenders opened for repewing, &c., the Independent Chapel, St. Ives:—

Parker, Thrapston	£472
Mills, Whittlesea	399
Harrat and Bland, Huntingdon	295

Tenders for labour of masonry and bricklaying for four houses, for Mr. Clark, Sunderland: Mr. Oliver, architect:—

Heron and Keall	£245
Simby	219
Forster	208
Walker (accepted)	126
Parkin	119

ARMSTRONG'S HYDRO-ELECTRIC ENGINE.—We lately witnessed the wonderful power of this machine at the Polytechnic Institution, Regent-street. As there remarked by the lecturer, the *old* machine used at that institution in exemplification of the great power of electricity, large and astonishing as its results once appeared, is a mere toy in comparison with this potent rival. And yet it is but a small locomotive boiler. It is mounted on six glass pillars, and contains its fire in the interior. Along the upper part of one side is a numerous series of jet pipes, through which the steam rushes, and in which, condensing into water it evolves the electricity. These jets are worked by handles on the opposite side, so as to allow of either the whole power, or a part only, being set on. The long streaks of light which shoot from all parts of the surface when a sparking rod is directed towards the boiler, can no longer, with the least propriety, go under the name of mere *sparks*—they are no mean semblance of the forked lightning of nature itself, and our *respect* for the dartings, which were displayed in darkness, was by no means diminished by the dread shriek of "hell in harness," which ever accompanies them here, as the storm-shriek often does in nature's lightning-play. A powerful battery of the usual order is charged by this machine in a moment almost, suddenly exploding bell wires into smoke. The *Gateshead Observer*, in giving us a recent account of an Armstrong, states that it was constructed at Louis Philippe's order for the Academy of Sciences at Paris, and that the republic having adopted it, Mr. H. Watson, of Highbridge, Newcastle, the manufacturer, is about to send it off to Paris. It will be the most powerful one yet made. We may here record our belief that the ultimate purpose and utility of such machines have not been yet realized, any more than have the limits of their power.

THE EXCAVATIONS AT BURY ST. EDMUND'S.—The whole plan of the prior's house is now laid open. The workmen, amongst other relics, have dug out a small cesspool with an oblique shoot from it, thought to have belonged to a piscina drain. Part of a passage paved with encaustic tiles has also been exposed, and several curious specimens of painted glass, one with a layer of shining substance between two flakes of glass, have been found, as also skeletons, coins, &c. The Archæological Committee speak of opening the entire ruins of the abbey, if possible.

MANCHESTER ART-UNION.—Following the example set by the London Art-Union, the committee of this association have this year determined to distribute, in addition to pictures, a quantity of statuettes in Parian and Carrara porcelain, including some impressions of a statuette of Sabrina, from the marble statue by Marshall.

POSITION OF NEW CEMETERIES.—As there is now a probability that some step will be taken to provide against future intramural burials by the establishment of cemeteries in the country surrounding this great metropolis, and other large cities and towns, I would suggest, that no Company should be allowed by the Legislature to establish a cemetery without purchasing sufficient land around it, to be for ever kept free from any habitable building, save and except the tenement necessary for the person who might be required to superintend the cultivation of such land, or to look after the plantation if it be so laid out. I am the more led to this opinion and suggestion from an advertisement which I saw in the *Times*, offering to the notice of such companies a desirable plot of ground at Lower Norwood, near Crown-hill, and stating as a desideratum that such plot was pleasantly bounded by some gentleman's pleasure-grounds,—a very great inducement, I should think, for the said gentleman to purchase the said plot by way of keeping his pleasure-grounds from contiguity with a burial-ground.

J. Y.

P.S. A medical friend of mine, to whom I mentioned this subject, remarked, that Government might convert the Isle of Dogs into a public cemetery, and I have to observe, that there is an excellent and silent highway to it,—the Thames,—and wharves on both its banks, from which a steamer appropriated for that purpose might convey the corpse and mourners at a very moderate expense.

IMPORTS AND EXPORTS OF IRON IN 1848.—From a Parliamentary return, it appears that the quantity of foreign iron, chiefly Swedish and Russian, imported in 1848, was 23,869 tons bar-iron, 464 tons blooms, 257 tons old iron, and 28,891*l.* odds in value of wrought-iron and steel. The quantity of foreign bar-iron exported was 3,432 tons, of steel unwrought 340 tons, of wrought-iron and steel, value 11,560*l.* The value of foreign iron retained for home consumption was 17,331*l.* Of British iron exported, chiefly to the United States, Holland, Iceland, Denmark, &c. &c., there were 175,650 tons pig, 32,135 tons bar, 17,554 tons bolt and rod, 19,371 tons cast, 76,365 tons wrought, and 61,913 tons steel unwrought, besides 1,913 tons wire and 7,241 tons old iron. The exports of British hardware and cutlery amounted to 18,105 tons, value 1,860,150*l.*, chiefly to America and Canada, East Indies, &c. Of British machinery and mill-work, the value of exports was 817,656*l.*, chiefly to Russia, Spain, Italy, Hans Town, France, Brazil, &c.

EMPLOYMENT OF ARCHITECTS: EXETER ARCHITECTURAL SOCIETY.—The council of this society, in their last report, say:—"Your committee have again, as on several former occasions, received applications for gratuitous plans for the whole or for a portion of churches. They have been obliged, in all these cases, to return a negative answer to the application, on the principle of not interfering with the exertions of professional men, especially as the constant and careful supervision of an experienced architect is as necessary to the satisfactory completion of a work as the promising of a suitable design. There will be always something occurring to call forth the genius of a living mind, and it is in the wise meeting of difficulties that skill is mainly shown; the difference between working by architect and by published plans is similar in kind to that between ornaments carved by hand and those stamped by machinery,—the latter must be a faithful copy of the stamp, but it is a mere lifeless reproduction of one type,—the other has more light and shadow, greater variety of design, and greater freedom in execution, while a due appreciation of the principles of Christian art will effectually check the danger of variety changing into what is opposite in kind, or of freedom degenerating into licentiousness. It needs a living architect to give life to a design; it also needs the recognition of well-defined principles of Christian architecture to inspire and to direct, to spur and to rein, the architect in his conception of a successful work."

MOSAIC GLASS.—We have lately been favoured with a sight of a work of art quite novel. It is called mosaic glass, and is adapted to many different purposes—church windows and church decorations, shop windows, and fan lights, window blinds, staircase windows, &c. It is equal in beauty and transparency to the most brilliant stained glass, and the designs for window blinds and other purposes are very rich. It has been brought out and patented at considerable expense and with much labour; but we have no doubt the company will be amply rewarded, for it requires only to be seen to be appreciated. It is produced at one-sixth the cost of stained glass; but it is not unlikely that its price will be enhanced when it has become well known, as the demand will be great. For church windows it is admirable, from the variety and beauty of the designs; and of its durability, the mode of combining the colour with the glass is a sufficient guarantee. It is also brought out in labels to a large extent, and, indeed, the variety of purposes to which it is applicable is very great.—*Leeds Intelligencer.*

IMMENSE BLOCK OF GRANITE.—Last week a "muckle hole" (a term used by the quarriers of stone) was put down 15 feet deep through solid granite, in one of the quarries of Stithians, near Penryn, belonging to Mr. Elliot, of the latter place. Only 25 lbs. of powder were deposited, which being blasted was found to have thrown off from its bed and side joints a block containing 20,300 cubic feet, or 1,400 tons, of excellent quality and blue colour, thus enabling the workmen to cut blocks of any dimensions required.—*West Briton.*

THE BRIGG CORN-EXCHANGE COMPETITION has been decided in favour of Messrs. Lockwood and Mawson, architects, of Hull; and the works are to progress immediately.

SPANISH CHURCHES.—A foreign correspondent of the *Athenæum*, writing from Saragossa, says:—"A leading feature in Spanish churches is always the 'retablo,' a huge erection of carving, gilding, and painting in wood or stone, rising immediately behind the high altar, generally to the height of the roof. This 'retablo" is often very handsome in its way; but to those acquainted with the fine churches of the north of Europe, it must ever appear a miserable substitute for the beautiful east window or windows which it supersedes. The *Lady-chapel*, together with the range of chapels circling behind the high altar, which form so exquisitely beautiful a feature in many of our cathedrals, is almost always wanting in the north of Spain; possibly because the entire church is but a *Lady-chapel* in this land of ultra-Marialatry. Thus the 'retablo' generally forms the eastern extremity of the building. The inclosed choir is often an eye-sore in our churches—it is yet more so in those of Spain. Placed generally from the altar, it is often near the west end of the nave; and consists of a solidly walled inclosure, which blocks up and embarrasses the perspective of the church sadly. It is shut in at the eastern end by an iron railway—'reja'—often magnificently worked, with a gate in the middle opposite to the altar."

NORTH SURREY INDUSTRIAL SCHOOLS.—In consequence of the calamitous occurrence at the late Mr. Drouet's school at Tooting, the guardians of the poor-law unions forming the North Surrey district resolved to form a school district and to erect suitable buildings. For this purpose fifty acres of land have been purchased, adjoining the Anerley station of the Croydon Railway, at Penge, Surrey, and tenders have been advertized for, to carry out designs prepared for the building by Mr. Charles Lee. The establishment is to be industrial, to have accommodation for 250 boys, 210 girls, and 140 infants, with three school-rooms and class-rooms, with apartments for steward, matron, three school-masters, and three school-mistresses, with dining-room, chapel, chaplain's-room, board-room, kitchens, bakery, offices, lavatories, baths, and workshops; also separate laundry-building, with all the necessary rooms attached thereto for drying, ironing, &c.; likewise a detached infirmary building, having all the requisite wards, nurses' rooms, kitchen, washhouse, surgery, &c.; there are to be also farm-buildings, so that the boys may be instructed not only in trades, but in farming operations, and the girls in dairy-work as well as in cooking, household-work, and needle-work.

NEW CHURCH OF ST. PETER, AT CROYDON.—A few days ago the foundation-stone of this church was laid by Mr. George Robert Smith, the banker, whose seat is at Selsdon, within the parish, the Rev. John George Hodgson, the vicar of Croydon, officiating. The site is very picturesque, on the side of a hill, ornamented with some good elms, and well seen from the Brighton Railway on the right, as it emerges from the cutting south of the Croydon station. The church is in the Early Decorated style, with aisles, south porch, and tower at the west end of nave, and is to accommodate 800 persons. The spire will be of shingle, the walls of flint, with facings of Maidstone stone. The site has been liberally presented by Mr. John Russell, the owner of the surrounding property. The architect is Mr. Scott. The church is to be built by contract, for which tenders have been made in consequence of advertisement, and we understand that eleven tenders were received, varying in amount from 6,893*l.* to 12,913*l.*, and with variations also according to specified difference of materials. The two lowest tenders were by Mr. Myers and Mr. Wm. Harris; the former being lower in some respects and the latter in others. Mr. Harris being a townsman, the contract was given to him.

BATHS AND WASHHOUSES.—At a meeting of the Works Committee of the Goulston-square model establishment, on 6th instant, returns were read, from which it appears that from 26th July, 1847, to 31st December, 1848, the number of bathers was 81,694, and the receipts 914*l.* 19s. 1d.; and that thence to 1st instant, the number of bathers was 82,219, and the receipts 1,058*l.* 1s. 7d. During the latter period the number of baths to men was 77,831,—to women, 3,187,—to children (sometimes four together) 1,201; and the weekly average was—to men, 2,223; women, 91; children, 35: weekly receipts, 30*l.* 5s. 4d. That even these encouraging returns were limited by the accommodation, appears from another return, showing, that since all the baths have been brought into use, there was an increase of 36,679 bathers during the three last months, over those during the same months of last year. In the washing department, since 30th April last, the number of washers, to 1st instant, was 3,013; and the number of driers the same; the number of hours' washing and drying being 10,005—average 3 hrs. 20 min. to each washer and drier. No ironing appears to have been done.

BATHS AND WASHHOUSES, LIVERPOOL.—A third suite of baths and washhouses have been ordered to be erected by the health committee, from plans proposed by the borough engineer. The site selected is at the junction of Cornwallis-street and Leveson-street, which forms the east corner of the spacious square inclosing St. Michael's Church and cemetery. The building, we are told, is designed in the simplest Italian style, two stories in height, and with projecting roof, and includes first, second, and third-class baths, and two classes of washing stalls, each of which will be distinct and separate from the rest, "with improved and original contrivances for wringing and drying the clothes."

WELBECK.—The Duke of Portland has long contemplated a great work, which is now in the course of being vigorously prosecuted. This is the erection of a bridge over the Welbeck lake head, near what is called Mosshall and the Dogkennels. Masons are daily expected from London, and a good deal of stone has been already got and hewn ready in blocks of various dimensions. The high hill, at Whitwell, has supplied some much more preferable to the Anston stone, it is said, which has been so much called for for the new Parliament Houses.—*Derby Courier.*

MANCHESTER BOROUGH GAOL.—The new prison at Manchester, alluded to by us some time since, is now nearly completed. It is stated that the cost of it will be about 120,000*l.*, and it is calculated to accommodate 500 prisoners. The cost, per individual, will therefore be 240*l.* About two years have been occupied in raising it. The boundary wall of the gaol incloses almost ten acres of ground, of which 5,641 square yards are occupied by the prison building, the remainder being exercising grounds, yards, &c.

A WIRE SUSPENSION BRIDGE has been thrown across the Ohio. It is 1,010 feet in length.

THE IRON-ROOF, LIME-STREET STATION, LIVERPOOL.—At a meeting of the Liverpool Polytechnic Society, held last week, Mr. Turner, of Dublin, who is constructing the new galvanised iron roofing and other iron works of the Lime-street railway station, furnished the meeting with the following particulars:—The roof covers an area of 6,140 square yards, being about 360 feet in length, and 153 feet 6 inches in width. There are no intermediate columns; but this great space is spanned over by one stupendous arch, rising in a segment of a circle, to a central height of 30 feet from the spring or chord. The roof consists of 17 curved girders of wrought-iron, resting at one side upon the walls of the offices, and at the other upon cast-iron columns of the Doric order, connected by ornamental arches, in perforated iron. These girders are trussed vertically by a series of radiating struts, acted upon by the bars connected with the extremities of the girders; and they are trussed horizontally by a series of purlins and diagonal rods, thus forming one rigid piece of framing from end to end. Upon this framing will be laid plates of galvanized corrugated iron, and three ranges of plate-glass (in sheets about 12 feet 6 inches in length, and of great thickness), extending the whole length of the roof. In consequence of the great extent of surface exposed to the variations of temperature, provision has been made for expansion and contraction of the iron without injury to its bearings. The roof, when finished, will weigh about 700 tons. The whole of the work, with the exception of the cast-iron columns and ornamental arches, is of wrought-iron. The iron columns upon which the roof rests on the south side of the yard are 2 feet 3 inches in diameter at their bases. Six of the girders are fixed, and the centres struck.

TO CORRESPONDENTS.

Received.—"C. R. C." (we shall be glad to receive it), "J. J. M.," "W. McL.," "P.," "R. J. W.," "X. Y. Z." (we have not yet seen it), "*Rus in urbe*," "Lover of Justice," "S. D." (we are unable to name a master for the purpose. Do not give up your trade. Personal application at school is all that is necessary), "E. C. M.," "J. T." (we cannot recommend), "A Subscriber," "J. M. L.," "Amicus" (should apply to the editor of the *Literary Gazette*), "Carolus," "Mr. J." (thanks), "F. L.," "V. Y.," "Londoner," "G. F. J.," "J. A." we have not received list of tenders for railway sheds, &c., at Boston), "W. R.," "W. H. L.," "E. B.," "S. P.," Ringwood (the number is out of print), "Young Carpenter" (we are compelled to decline. The number of inquiries to same effect would occupy more time than we could afford), "Young Architect" (ditto), "B. B." (ditto), "M." (ditto), "R. P.," "T. O.," "J. M." (safely received): "Pure Water for London," by T. D. Liberty; London, Piper, Paternoster-row, 1849: "The Cholera: the Claims of the Poor upon the Rich," by Thomas Beggs; London, Gilpin, Bishopsgate Without: "A Manual for the Study of the Sepulchral Slabs and Crosses of Middle Ages," by the Rev. E. L. Cutts, B.A.; London, J. H. Parker, Strand.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

ADVERTISEMENTS.

BRITISH MUTUAL LIFE OFFICE.—The Public are invited to examine for themselves the advantages gained for Assurers by the plan on which policies are granted by this Office.—Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

ARCHITECTS', BUILDERS', and GENERAL FIRE and LIFE INSURANCE COMPANY, 69, Lombard-street, London.

CHAIRMAN, SYDNEY SMIRKE, Esq., A.R.A.
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The rates for both Fire and Life Insurances are as low as can with safety be taken. Those for Life Insurance may be paid either yearly, half-yearly, or quarterly; one-half the annual premium may be left unpaid for seven years, or one-third to the end of life. Thus large sums may be insured at the smallest present outlay.

Prospectuses, forms of proposals, &c., may be had at the Office 69, Lombard-street, or of the agents.

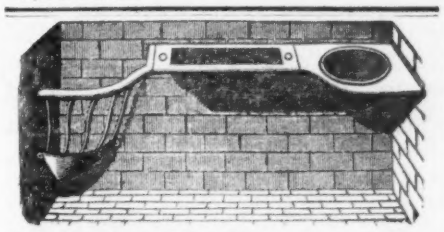
JOHN REDDISH, Manager.

THE LIVERPOOL and LONDON FIRE and LIFE INSURANCE COMPANY, 8, Water-street, Liverpool; 3, Charlotte-row, Mansion-house, London; and 28, Regent-street, Waterloo-place, London.

Liability of the Proprietors unrestricted.
Moderate Premiums in the Fire Department.
Peculiar advantages in the Life Department.
Policies, insuring the value of Leasehold Property at the termination of the Lease, are also issued.

Persons whose Policies with this Company expire on the 29th instant are respectfully reminded that receipts for the renewal of the same will be found at the head offices in London and Liverpool, and in the hands of the respective agents; and those who, preferring the security offered by this Company, may desire to remove their insurances, are informed that no expense will be incurred by such removal.

BENJ. HENDERSON, Resident Secretary, London.
SWINTON BOULT, Secretary to the Company.
September 13, 1849.



SAMUEL HOOD and Co., Castings Warehouse, 81, Upper Thames-street. REGISTERED STABLE FITTINGS. Enamelled Mangers, with double hay-racks, or with enamelled water cistern on one side.

ELEGANT and SUBSTANTIAL CABINET FURNITURE.—RICHARD A. C. LOADER, 24, Pavement, Finsbury, most respectfully solicits the public attention to his extensive and varied Stock of Furniture, of the newest and most elaborate designs, feeling assured that an inspection will ensure an immediate sale.

Mahogany dining-room chairs, from	14s.
Drawing-room ditto, from	16s. 6d.
Mahogany easy chairs, in leather, on castors, from	31s. 6d.
Marble-top basin stands, from	3½ gs.
Mahogany loo tables, from	32s.
Rosewood ditto, from	3 gs.
Mahogany chests of drawers, from	48s.
Mahogany four-post bedsteads, with cornices, from	4 gs.

RICHARD A. C. LOADER, 24, PAVEMENT, FINSBURY.

CROGGON'S PATENT ASPHALTE ROOFING FELT and INODOROUS FELT, for DAMP WALLS. Sold in rolls, 32 inches wide, price one penny per square foot. Also, Dry Hair Felt for preventing the radiation of heat and deadening sound. Samples, directions, and testimonials sent by post, on application to CROGGON and Co., No. 2, Dowgate-hill.

DAMP and GASEOUS EXHALATIONS. SANITARY MEASURES.

MEMBERS of BOARDS of HEALTH are especially directed to the most EFFECTIVE MEANS which they can adopt to prevent the injurious and often FATAL EFFECTS upon the HEALTH of the COMMUNITY, arising from exhalations that are produced from moisture, decayed animal matter (as in graveyards), stagnant water, and collections of fœtid refuse, tending to produce a miasmatic state of atmosphere. In situations so affected, the impervious quality of the ASPHALTE of SEYSSEL renders it the most perfect PAVEMENT or COVERING that can be relied upon for hermetically closing, and thereby preventing, the rising of moisture and the escape of noxious vapours. The present extensive application of this material for covering roofs, terraces, and arches, for preventing the percolation of wet, is strong evidence of its effectiveness for the above purposes, which is further confirmed by the following extract from the Report of the COMMISSIONERS on the FINE ARTS.

I. FARRELL, Secretary.

Seyssel Asphalte Company, Stangate, London.

"In 1839, I superintended the construction of a house of three stories on the Lac d'Enghien. The foundation of the building is constantly in water, about 19½ inches below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered at the level of the internal ground floor with a layer of SEYSSEL ASPHALTE,* less than half an inch thick, over which coarse sand was spread. Since the above date, no trace of damp has shown itself round the walls of the lower story, which are for the most part painted in oil, of a grey stone colour. It is well known that the least moisture produces round spots, darker or lighter, on walls so painted. Yet the pavement of the floor, resting on the soil itself, is only about 2½ inches above the external surface of the soil, and only 19½ inches, at the utmost, above that of the sheet of water. The layer of Asphalte having been BROKEN AND REMOVED, for the purpose of inserting the sills of two doors, spots indicating the presence of damp have been since remarked at the base of the door-posts."

* This method has been adopted at the new Houses of Parliament.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

BIRMINGHAM PLATE GLASS COMPANY are supplying PLATE GLASS of a superior quality, at an unusually moderate rate of charge. For estimates apply at their warehouse, No. 141, Fleet-street. Rough Plate, ¼, ⅜, ½, and 1-inch thick.

PLATE GLASS.—British Plate Glass, under 1 foot super, 1s. 2d.; under 1 foot 6 inches, 1s. 6d.; under 2 feet, 1s. 9d.; under 3 feet, 2s., per foot.

SHEET GLASS.—No. 16, ounce sheet, 3rd quality, in 200 foot cases, 28s. per case. No. 21, ditto, ditto, ditto, 32s. per foot.

Estimates for every description of glass, from 1-8th to 1-inch, may be had at THOS. MILLINGTON'S Warehouse, 87, Bishopsgate-street Without.

E. and W. H. JACKSON beg to call the attention of Builders and the trade to the reduced prices of their PATENT PLATE GLASS, which, from its cheapness, is now superseding crown in all respectable dwelling-houses. BRITISH and ROUGH PLATE, CROWN, SHEET, STAINED, and ORNAMENTAL GLASS, supplied of the best manufacture, and at the lowest terms. List of prices, estimates, and every information can be had on application at their warehouse, 315, Oxford-street.

THE UNION PLATE GLASS COMPANY beg to call the attention of architects, surveyors, builders, large consumers, and the trade generally, to the quality, colour, and substance of their highly-finished glass, and as the discounts vary according to size, they prefer giving a special estimate for each quantity required. To encourage the use of Plate Glass for glazing purposes, the price is considerably reduced, which will, for its durability and appearance, insure the preference to any other description.

ROUGH PLATE GLASS supplied for skylights, warehouses, workshops, and flooring, 3-8ths, ½, ⅝, and 1 inch thick.

London Warehouse, 99, Hatton-garden, Holborn.

H. CHRISTIE, Agent.

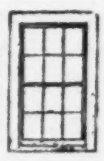
THE PATENT DECORATIVE GLASS COMPANY beg to call the attention of Architects, Builders, and the trade generally, to their VITRIFIED LACE PATTERN GLASS, and having completed the extensive alterations in their works, are enabled to offer their superior article from 1s. per foot super., and borders from 6d. per foot run. The process and the effect produced are quite novel, perfect representations of net or muslin curtains, with embroidered borders correct in every detail. It will be found of great importance for window blinds, picture galleries, skylights, &c., and adds very materially to the decoration of an apartment. Glass painting and embossing in all its branches. Specimens of every description can be seen at the works, where tariffs can be obtained.

Resident Manager, T. CARTISSER.

21, Castle-street, Southwark-bridge-road.

CHAS. WM. WATERLOW, MANUFACTURER

of Sashes and Frames, and Joiner to the Trade, 131, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.



J. GOODWIN'S TERRA-METALLICA BLUE TILES.—Ridges, Hips, Valleys; Quarries, Building and Flooring Bricks, Barn-floor Bricks, Malt-kiln Quarries, Cylindrical, Conical, and Socket Pipes, of every variety and size, to be had at the LODGE TILERIES, near Stoke upon-Trent, from whence the Trent and Mersey Canal, and the North Staffordshire Railway, open a ready communication with all parts of the kingdom.—N.B. Price of Socket Pipes reduced to—

Two Feet Long—

16	15	14	12	10	9	8	6	5	4	3 in. diam.
4s. 6d.	4s.	3s. 3d.	2s.	1s. 8d.	1s. 4d.	1s. 1d.	11d.	9d.	8d.	6½d. each.

And all other kind of pipes reduced in same proportion.

WILLIAMS'S PATENT SLATE RIDGES and HIPS.—The above article is recommended, as the best and most suitable covering for Ridges and Hips of slated roofs ever invented, possessing a solid Roll of various sizes, more elegant and durable than lead, and 30 per cent. cheaper.—Sold by Messrs. J. and J. SHARP, Slate Merchants, Tooley-street, and Mr. RICHARD COOPER, Slate Merchant, Belvidere-road, Lambeth, London.

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HENRY BROWN, Proprietor.

Brick, Tile, and Pottery Kilns, Mount-pleasant, Marden, Kent.

FIRE BRICKS, STOCK BRICKS, and RED GOODS of every description and first-rate quality. A most extensive stock always on hand.—WARD and CO., of Honduras Wharf, Bankside, London, beg to call the attention of buyers to their present low prices for cash:—Good stocks, per thousand, 34s.; pickings from ditto, 31s.; best Yorkshire pantiles, 48s.; ditto plain, 30s.; Stourbridge, Welsh, and Newcastle fire bricks, lumps, tiles, clays, loams, &c. &c., malting and oven tiles, and every description of goods generally used in steam-engines, furnaces, coke ovens, stoves, &c. &c.; Dutch clinkers, sand, gravel, red and white house sand. Country buyers will find this the cheapest market. Pattern articles made promptly.

FIRE-CLAY and TERRA-COTTA HOLLOW BRICKS, &c.—Chimneys, pipes, glazed and plain, vases, capitals, panellings, paterræ, brackets, trusses, beadings, and ornaments of all kinds, usually made in cement or stoneware, are now offered, at cement prices, in the above material, the superiority of which, in colour, durability, and general appearance and execution, is so well known. Patent Hollow Bricks of the most approved form kept on hand. The attractive designs of the Architectural Publication Society executed upon an order for twenty-five of a sort. The less complicated forms will be kept on hand.—SAMUEL TUPMAN, Agent to the Cliffe Colliery and Terra-Cotta Works, Wakefield, Yorkshire. Western Wharf, Adelphi, September 20, 1849. Entrance at bottom of George-street, Adelphi.

Messrs. HERTSLET and BROUGHTON, Proprietors.

CLEANLINESS is necessarily at all times conducive to health, and this, as well as economy, is greatly promoted by substituting for the noxious process of painting with oil and white lead, STEPHENS'S DYES for STAINING WOOD, as a SUBSTITUTE for PAINT, for decorating churches, large public rooms, and theatres, as well as private dwellings. When economy in expenditure of material and time is of importance, these Dyes will be found of the greatest advantage, as they give a rich colour to plain woods, while they reflect all the beauty of the natural graining, which is so superior to imitations by art, and, at the same time, avoid the disagreeable smell and deleterious consequences of paint. The Dyes, or Stains, are prepared and sold by HENRY STEPHENS, 54, Stamford-street, Blackfriars-road, London, in bottles at 6d. and 1s. each, and at 8s. per gallon. The Oak, Mahogany, and Satin Wood Colours may be obtained in powder at 8s. per lb., which dissolves in water to form the liquid, and 1 lb. will make one gallon of stain.—N.B. The trade supplied.—Sold also at the Office of "The Builder," 2, York-street, Covent Garden, London; at both which places may be had the proper Varnish and Size, with directions for their use.

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TARPAULINS for COVERING ROOFS during Repairs. SCAFFOLD CORD and every description of ROPE used by Builders upon the lowest terms. Marquees and temporary awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 113, Fore Street, City, Manufacturer, by Appointment, to Her Majesty's Honourable Board of Ordnance.

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Sept. 1, 1849. THOMAS EDWARDS, Proprietor.

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BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

CAST-IRON PIPES, IRON WORK FOR OVENS, &c.

RAIN PIPES, &c.—F. A. TIDDEMAN, 8, Ann's Wharf, Earl-street, City, near Blackfriars-bridge, keeps a large stock of Rain Pipes, Heads, Shoes, Elbows, &c., half round and O. G. Gutters, Socket Pipes for Water or Gas, Flanch Pipes, Sash Weights, and other Castings; Iron Work for Bakers' Ovens of every description, fitted complete, to be had in sets or in parts.—Prices equal to all competition. Contracts taken to any extent. Goods landed. A powerful crane.

PROTECTION from FIRE, and GREAT ECONOMY in BUILDING.—A pamphlet, descriptive of the method by which both these important objects are secured, may be obtained on application to Messrs. FOX and BARRETT, 46, Leicester-square.

TO BUILDERS and CARPENTERS.—Elliptic Stoves, double backs, 3d. per inch. Registers, 6½d 7d., 8d. per inch.

Cottage Ranges, with Ovens and Boilers, 3 ft. 2 in. 40s.; 3 ft. 4 in. 42s.; 3 ft. 6 in., 44s.

Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings,

3 ft., £2. 18s.	3 ft. 6, £3. 7s.	4 ft., £3. 15s.

Best Patent Cut Clasp.

4½d.	5d.	7d.	10d.	1s. 2d.	1s. 8d. per 1,000
3d.	4d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads, 12s. 6d. per cwt.

Best Town Glue 26s. Do. Scotch, 32s. per cwt.

Best Patent Sash Line.

4s. 3d.	5s.	6s. 9d.	7s. 6d.	10s.	12s. per gross.
1	2	3	4	5	6

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Lists of Prices had on application at the Warehouse, or by letter pre-paid, inclosing postage stamp.—Warehouse closes at 7 o'clock.

TO ARCHITECTS, BUILDERS, &c.

HAYWARD, BROTHERS, late R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3.	£3. 10s.	£3. 15s.	£4.	£4. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—3 ft. 3 ft. 3 in. 3 ft. 6 in. 3 ft. 9 in. 4 ft.

£5.	£5. 15s.	£6. 5s.	£6. 10s.	£7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.

Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFANTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

TO ARCHITECTS AND BUILDERS.

CHUBB'S WROUGHT-IRON and FIRE- PROOF DOORS and FRAMES, for strong Rooms. A large stock of the above, of all sizes, made in the best manner, and of different strengths, fitted with CHUBB'S PATENT DETECTOR LOCKS, throwing from two to twenty bolts, constantly on sale, at very moderate prices. FIRE-PROOF SAFES of every size, and Patent Detector Locks and Latches for all purposes.—C. CHUBB and SON, sole Manufacturers, 57, St. Paul's Churchyard, London.

LEADBEATER, FIRE-PROOF SAFE AND DETECTOR LOCK MANUFACTURER TO HER MAJESTY'S BOARD OF ORDNANCE.

CAUTION to Purchasers of FIRE-PROOF DOORS for Strong Rooms, Safes, Chests, and Detector Locks, &c. &c. LEADBEATER, many years manufacturer for Chubb.

LEADBEATER begs most respectfully to inform Architects, Surveyors, Builders, &c., that he can supply them with IMPROVED DETECTOR LOCKS for universal purposes. STRONG WROUGHT IRON FIRE-PROOF DOORS, SAFES, and CHESTS, &c., on the most improved principles of security against FIRE and THIEVES, without the aid of "expensive machinery," which is employed by some inexperienced makers, but must be paid for; at prices 25 per cent. under any other house in London.

LEADBEATER offers ONE HUNDRED POUNDS reward to any person who can pick his improved detector locks or latches. Some thousands of Leadbeater's strong-room doors and safes have now been put up without a SINGLE COMPLAINT, and fifteen years' practical experience, during which he has adapted every possible improvement to real security, enables him to challenge competition with any house in London. A large assortment of all sizes on sale and made to order. A pair of extra strong wrought-iron fire-proof folding-doors with ventilating gates, made expressly for a banker's strong room, may be viewed at his manufactory. Strong wrought-iron doors for party walls, with wrought-iron rabitted frames, and secured by the BEST DETECTOR LOCKS in ENGLAND, 6 feet high by 2 feet 3 inches wide and upwards, price 10l. each, always on hand at LEADBEATER'S MANUFACTORY, 186, ALDERSGATE-STREET, LONDON.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS, Manufactory, 26, REGENT-STREET and 121, CHANCERY-LANE. Patent sealed on the 4th day of February, 1845, for Fourteen Years, for Improvements in Revolving Shutters of WOOD and IRON, consisting of Six Methods of Raising and Lowering Shutters, without Machinery, and Two for Hinging and Sheathing the Edges of Wood Laths with Iron.—The Patentee having fixed up some hundreds, will feel pleased in forwarding the Testimonials of Architects, Principals of large Establishments, and others, having them now in use, which fully guarantees the Patentee in stating they are beyond dispute superior to any other Revolving Shutter for durability, security, and simplicity, without the use of cog-wheel worm and screw gear, or any other complicated machinery employed by other makers.

BUNNETT and Co., ENGINEERS, Patentees of

REVOLVING IRON AND WOOD SAFETY SHUTTERS, and of

ORNAMENTAL METALLIC SASH BARS, MOULDINGS, &c., IN BRASS, COPPER, ZINC, &c.

FOR SHOP-FRONTS, SKYLIGHTS, &c.

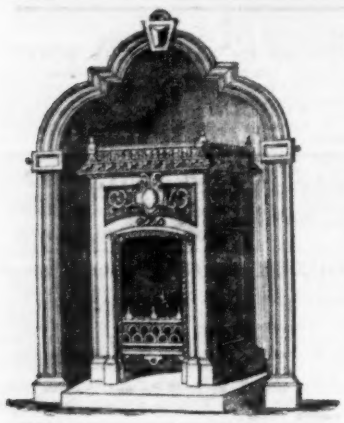
Shop-fronts completely fitted and fixed in a superior style, either plain or ornamental, also glazed with best plate glass. Strong moulded stallboards handsomely engraved. Metal works and machinery of all kinds in connection with banking-houses, shops, warehouses, &c. &c.

B. and Co. challenge competition as to either quality or price. Designs furnished and estimates given.

IMPROVED PATENT BENCH AND FLOORING CRAMPS FOR BUILDERS.

SOLE LICENCEES FOR MARVIN and MOORE'S PATENT DIAGONAL GRATINGS.

Office of the Patentees, 26, Lombard-street, London; and at the Works, Deptford, Kent.



IMPORTANT IMPROVEMENTS IN WARMING AND VENTILATING

CHURCHES, CHAPELS, INFANT AND OTHER SCHOOLS, PUBLIC BUILDINGS AND PRIVATE DWELLINGS, &c. &c.

BY MEANS OF

PIERCE'S NEWLY-INVENTED PATENT

PYRO-PNEUMATIC PURE WARM AIR SELF-ACTING AND VENTILATING STOVE GRATE.

PIERCE solicits an examination of his newly-invented method of WARMING AND VENTILATING, by means of his Patent Pyro-Pneumatic Stove Grate, which, from the

NOVELTY OF ITS PRINCIPLE, SIMPLICITY OF ITS ARRANGEMENTS, AND ELEGANCE OF DESIGN,

combined with its great ECONOMY IN USE, renders this grate suitable for any situation where a POWERFUL DEGREE OF WARMTH, and the CHEERFUL OPEN FIRE are desirable.

PIERCE having at length succeeded in producing that long-sought *desideratum*—a HEALTHFUL AND SALUBRIOUS atmosphere, such as is felt on a pleasant summer's day, which can, by means of this his Patent Pyro-Pneumatic Stove Grate, be enjoyed during the most dull and dreary of our winter months. The above invention is specially adapted for warming churches, infant and other schools, railway offices, entrance halls, banking houses, &c., &c., or any situation where warmth and purity of air are desirable.

IT MAY BE SEEN IN DAILY USE AT THE PATENTEE'S MANUFACTORY,
5, JERMYN-STREET, REGENT-STREET;

also warming the large MODEL ROOM at the SOCIETY OF ARTS, John-street, Adelphi (who have awarded their Honorary Medal to the inventor).

This newly-invented Stove-Grate has received the most favourable notices of the public press, for which see the prospectus and testimonials, to be obtained of the Patentee, at his

MANUFACTORY AND SHOW ROOMS, No. 5, JERMYN-STREET, REGENT-STREET.

VENTILATION. — TO ARCHITECTS,

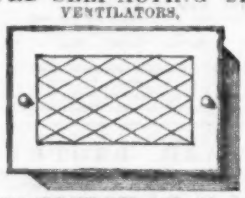
BUILDERS, GAS-FITTERS, AND GENERAL IRONMONGERS.—The attention of all concerned in the building and interior arrangements of houses is invited to the improved self-acting CHIMNEY VALVES constructed by Platow and Co., on the principle invented and made public by Dr. N. Arnott, with some practical details added to the original design. These valves are now fitted in strong cast-iron boxes, with secret balances and adjusting screws and other improvements, devised on strictly scientific, yet simple principles, and are to be obtained at the following reduced prices:—

	japd. bronze.		japd. white gold beads.
	s. d.	s. d.	s. d.
No. 0—10 by 7½ ..	8 0		
No. 1—12 by 8½ ..	17 0	With trellis 22 0	With brass frame 33 0
No. 2—14½ by 10½ ..	22 0	and trellis burnish. 28 0	and lacq. or bronzed 46 0
No. 3—17 by 12½ ..	28 0	fronts. 38 0	and lacq. or bronzed 70 0

On receipt of a post-office order (payable at 62, High Holborn), including 6d. extra for package, any of the above sizes will be forwarded to any part of the country, with a sheet of drawings and full directions for fixing, &c.

PLATOW and Co's Wholesale Gas, Chandelier, and Fitting Manufactory and Warehouse, 55 and 56, High Holborn.

IMPROVED SELF-ACTING CHIMNEY VENTILATORS,

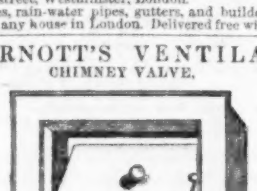


FOR CARRYING OFF HEATED AND IMPURE AIR from drawing-rooms, sitting-rooms, bed-rooms, nurseries, offices, &c. &c., from 5s. each.—BURT and POTTS, Manufacturers and Ironmongers, 65, York-street, Westminster, London.

Stoves, ranges, rain-water pipes, gutters, and builders' ironmongery, as low as any house in London. Delivered free within 8 miles.

DR. ARNOTT'S VENTILATING CHIMNEY VALVE,

With internal movement, and all the latest improvements.



Constructed for the ventilation of apartments generally.

REDUCED LIST OF PRICES.

	First size, 11 by 8.	Second size, 16 by 9
Plain Iron Valve	6 0	9 6
Bronzed and Leathered	7 0	10 6
Japanned, white with Gold lines	11 6	16 6
Ditto with Trellis-work	17 0	25 0
Brass Front, lacqd. or bronzed	13 6	19 6
Ditto with Trellis work	19 0	27 0

Ventilators of any description made to order.

Manufactured by HART and SONS, 53, 54, 55, Wych-street Strand, London.—Post-office orders payable at 180, Strand.

SMOKY CHIMNEYS.—

"NO CURE NO PAY."

J. WILSON, Bricklayer and Surveyor of Chimneys, 1, Vale-place, Hammersmith, begs to inform architects, surveyors, builders, and others, that he can guarantee a perfect cure of chimneys from smoking into rooms, and on the equitable terms of "No cure no pay." References and testimonials of the highest respectability can be given.

N.B. WILSON & Co.'s PATENT CHIMNEY POTS for the Cure of Smoky Chimneys, which have been extensively tested for the last four years, can be forwarded to any part of the Kingdom on receipt of a Post-office order. Prices and prospectuses by return of post. Licenses granted to manufacturers.

MANUFACTORY—VALE-PLACE, HAMMERSMITH, MIDDLESEX.

SMOKY CHIMNEYS.—WHITE'S

UNIVERSAL CHIMNEY POT or VENTILATOR (registered April 11th, 1849) prevents "down draft," without the usual obstruction; may be fixed in any situation without raising the flue, has no moveable parts, and if required may be made to be swept with the common machine, thereby requiring no extra attention for years. As a ventilator for courts of justice, churches, &c., its qualities are equally good, and both may justly be said to possess all the essentials combined in one machine.—Sold by Messrs. DEANE and Co., London bridge, and by agents throughout the United Kingdom.

To facilitate its application, the proprietor will forward, post free, patterns in paper of the important parts, with instructions and label, to any part on receipt of 7s. through the Jersey post-office, by which the machine may be constructed at a small expense in the most remote localities. It would be necessary to state the size of the flue, and also whether it is required to be swept from the inside.—GEORGE WHITE, Proprietor, St. Mark's, Jersey.

TO ENGINEERS, BUILDERS, PLUMBERS, &c.

RAIN-WATER PIPES,

Heads, Shoes, and Elbows, half-round and O G Gutters, Sash Weights, Railing Bars, Sink Gratings, Air Bricks, close and open Coal Plates, Scrapers, Tile Lights, Balcony Panels, narrow and navy wheels, &c.

CAST and WROUGHT IRONWORK for STABLE FITTINGS, viz.—Mangers, Hay-racks, Ramps, Cills, Stable Traps, Gratings, &c.

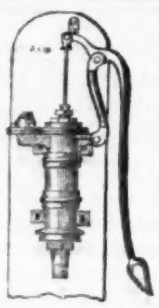
GAS and WATER PIPES, bends, branches, Tee pieces, syphons, and lamp columns; also hot-water pipes for heating buildings and hot-houses, and FLANGE PIPES, with all the usual connexions. A large stock of the above CASTINGS at very low prices, at JONES'S, Iron Bridge Wharf, No. 6, Bankside, Southwark.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

PUMPS of Superior CONSTRUCTION,

bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICKMAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.

BENJ. FOWLER (late of 63, Dorset-street), removed to the new Factory, Whitefriars-street, Fleet-street.



TO BUILDERS AND PLUMBERS

THE attention of the

Trade is called to

JOHN WARNER & SONS' PATENT VIBRATING STANDARD PUMP,

which is recommended for the simplicity of its construction, and the ease with which it works.

By the introduction of the vibratin standard the cumbrous carriage and expensive slings and guides are unnecessary, rendering the price considerably less than pumps made on the old plan.

Beer and Water Engines for raising fluids from a depth not exceeding 28 feet; also, Garden Engines constructed on the same principle.

JOHN WARNER & SONS,
8, Crescent, Jewin-street, London,
Manufacturers and Patentees.

PUMPS, WATER-CLOSETS, and

PLUMBERS' BRASSWORK.—Pan water-closets, with white basin complete, 27s. each; 2-inch lift pumps, 6s.; 2½-inch, 7s.; 3-inch, 8s.; 3½-inch, 11s. Well pumps and cocks for plumbers and engineers, of every description.—THOMAS MILLINGTON'S Manufactory, 87, Bishopsgate Without, London.

PAN CLOSETS, PUMPS, and

PLUMBERS' BRASSWORK, &c.—Pan Closets, with White Basins, complete, 25s. each; 2-in. Lift Pumps, 5s.; Well Pumps, Cocks, and every description of Plumbers' Brasswork equally low, at M. CHANY'S old-established Manufactory, 34, Clifton-street, Finsbury-square, London.

Gun-metal Steam Cocks, Safety Valves, and Boiler or draw-off Cocks of all descriptions.

TO CONTRACTORS, BUILDERS, PLUMBERS, &c.

PUMPS.—M. A. RICHARDS keeps a large

stock of WROUGHT and CAST-IRON PUMPS of all sizes, suitable for excavations, deep wells, roads, gardens, brickfields, liquid manure, ships and barges, at reduced prices; single and double barrel pumps kept to hire. Well-boring tools, pipes, &c., of any dimensions, made on the shortest notice. Hot-water apparatus for churches, chapels, conservatories, &c., on the most economical and improved principles.—3, Old Barge House-street, Upper Ground street, Blackfriars.—N.B. Estimates given for all kinds of ironwork.

TO PLUMBERS, BUILDERS, AND ENGINEERS.

CHEAPEST HOUSE IN LONDON for every description of best Town-made Brass and Copper Work.

PAN CLOSETS complete, with WHITE

BASIN, 27s.—2 inch Lift Pumps, 6s.; 2½ in., 7s.; 3 in. 8s. 6d. Cocks: ½ in., 1s. 8d.; 5-8th in., 2s.; ¾ in., 2s. 6d.—Copper Pipes, per foot: 1 in., 10d.; 1¼ in., 1s.; 1½ in., 1s. 2d.; 2 in., 1s. 6d.

Gun Metal Steam Cocks, Safety Valves, Steam and Water Indicators, &c., equally low at A. McGLASHAN'S, 16, Long-acre, and Hart-street, Covent Garden.

SEWERS, DRAINS, &c., would not

crumble to pieces and disappoint the public if constructed of the material which Mr. Telford stated to be, "in fact, the hardest and most durable of any in England;" and which Mr. Loudon considered to be almost equally hard as cast-iron, and, from its nature, incomparably more durable. Bricks of any form to line sewers, &c.; also drain pipes of every form and size, very true in form, and smooth inside (the blue colour being a natural and imperishable glaze), with the various connecting and syphon pipes, &c. &c.—Address, THOMAS PEAKE, 4 Wharf, Macclesfield-street South, City-road Basin, London; or the Tileries, Tunstall, Staffordshire Potteries.

GLAZED STONE WARE DRAIN

PIPES.—TURNER and MOUNTAGUE, Leigh, near Southend, Essex, manufacturers of stone ware drain pipes and drain tiles. Drain pipes and tiles to any pattern.—Orders received at, and executed from Harrow-bridge Wharf, Stratford, Essex; Falcon Wharf, 80, Bankside, Blackfriars; and at their Cement Works, Orchard House, Blackwall.

COBBETT'S REGISTERED GLASS

VALVE CLOSET.—The materials of which the valve is constructed, "Vulcanized Indian-rubber and Glass," both substances impervious to the action of the soil, give it a claim of superiority over the metal pan and valve, which so soon corrode, and lose the water from the bason, causing an unpleasant smell. The glass valve also has a very clean and perfect appearance. It can be seen in action at the Manufactory, 34, Villiers-street, Strand, where it is in constant use.

GEORGE JENNINGS, 29, Great Charlotte-street, Blackfriars-road, begs to call the

attention of those interested to the following article, which he has invented and patented, JENNINGS'S PATENT SHOP SHUTTER SHOE AND FASTENER.—The trouble and disfigurement caused by the unsightly shutter bar is so well known to all persons, that it is only necessary to say a shop front receives more injury from the application of the shutter bar than it does from any other cause.

Fig. 1.

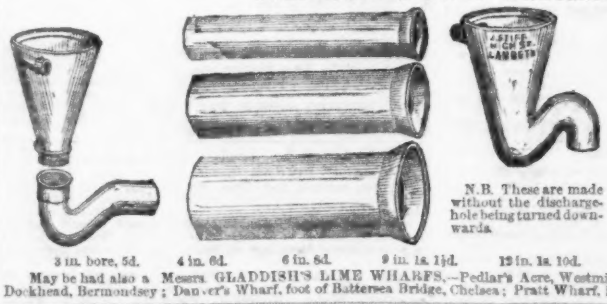
Fig. 1 represents a pair of Jennings's Shutter Shoes and Fasteners, which not only protect the corners of the shutters, but effectually secure them; and the cost of the patent fastenings is less than the destructive and troublesome bar. They can be had in malleable iron at 3s. per shutter, or in brass at 4s. per shutter; and are to be seen at most of the principal shops in London. Reference given to upwards of 3,000 fronts shod and secured by this simple fastening.—The foregoing, with JENNINGS'S VALVES, &c., can be had at his Manufactory, 29, Great Charlotte-street, Blackfriars-road, London.

JAMES STIFF, MANUFACTURER of GLAZED STONE WARE DRAIN PIPES,

BENDS, JUNCTIONS, TRAPS, &c., 39, HIGH STREET, LAMBETH, LONDON. Established 1751.

Water Closet Pans, with Syphon Traps, 7s. 6d. each.

STRAIGHT TUBES, with Socket Joints, in 2 feet lengths



N.B. These are made without the discharge-hole being turned downwards.

The great advantages attending the use of these articles are now so generally understood, as to render any enumeration of them almost superfluous. Their cheapness, efficiency, and durability, are universally admitted; while the rapidly increasing demand for them proves their estimated superiority over every other kind hitherto before the public for similar purposes.

Inspection is invited to an assorted stock of Drain Tubes, of every form and size, adapted to the various situations for which they may be required; as also to the WATER-CLOSET PANS OF IMPROVED CONSTRUCTION, and interior glaze far surpassing any other manufactured of Brown Stone Ware.

3 in. bore, 5d. 4 in. 6d. 6 in. 8d. 9 in. 1s. 1½d. 12 in. 1s. 10d. 18 in. 3s. 18 in. 4s. per Foot.

May be had also at Messrs. GLADDISH'S LIME WHARFS,—Pedlar's Acre, Westminster Bridge; City-road Wharf, City Basin-Dockhead, Bermondsey; Dancer's Wharf, foot of Battersea Bridge, Chelsea; Pratt Wharf, King's-road, Camden New Town.

DRAIN and WATER PIPES in GLAZED STONE WARE,

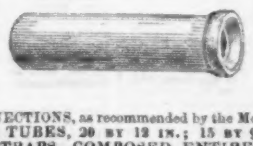
MANUFACTURED BY HENRY DOULTON AND Co.—OFFICES: High-street, Lambeth, London.
MANUFACTORIES: BIRMINGHAM POTTERY, ROWLEY REGIS, STAFFORDSHIRE: and High-street, Lambeth

STRAIGHT TUBES, WITH SOCKET JOINTS, from 1 inch to 24 inches bore.

DEAR SIR,—I would respectfully recommend the building profession generally, in future to use no other material than glazed stoneware Pipes for house drains; and I am quite sure by their so doing, they will be conferring a great boon on public health, and that to an extent they little suppose. I also respectfully submit that there is now no reasonable excuse for their not using them, for it has been proved that as regards strength, durability, and efficiency, there cannot be a better article.

I am, Dear Sir, yours truly,
Mr. H. Doulton. JOHN PHILLIPS.

Testimonials from Messrs. ROE and PHILLIPS, Surveyors to the new Metropolitan Commission of Sewers.



DEAR SIR,—In reply to your request, I beg to state that Glazed Stoneware Tubular Drains are those which I would in all cases recommend builders or proprietors of houses to use, there being no other material that at this time equals them in efficiency joined with economy.

I am, Dear Sir, yours truly,
Mr. H. Doulton. JOHN ROE.

JUNCTIONS WITH EASY CONNECTIONS, as recommended by the Metropolitan Commission of Sewers.
REGISTERED EGG-SHAPED TUBES, 20 BY 12 IN.; 15 BY 9 IN.; 9 BY 6 IN.; 6 BY 4 IN.
REGISTERED AIR-TIGHT FLAP TRAPS, COMPOSED ENTIRELY OF GLAZED STONE WARE.
BENDS, JUNCTIONS, AND SYPHON TRAPS OF EVERY DESCRIPTION.